

MR. PERKINS:

Q. Can you state what roads those stations are on, so we can follow that up?

A. I have Victoria on the Texas and New Orleans.

Brownwood on the Fort Worth & Rio Grande.

Wharton, Texas, on the G., H. & S. A.

Abilene on the Texas and Pacific.

San Antonio on several roads, among them the I. & G. N., and I have figured I. & G. N. divisions on this chart.

Eastline, Texas, on the Texas & Pacific.

Big Springs on the Texas & Pacific.

Austin on the I. & G. N. among other roads and I have used I. & G. N. divisions.

Corsicana on the Cotton Belt.

Waco on the Cotton Belt and I have used Cotton Belt divisions.

Palestine on the I. & G. N.

Fort Worth on the Texas & Pacific among other roads and I have used Texas & Pacific divisions.

New Boston on the Texas & Pacific.

Marshall on the Texas & Pacific.

Tyler on the I. & G. N. and Cotton Belt, and I have used Cotton Belt divisions.

The first class rate from Chicago to these points—that is, the proportion of it which Iron Mountain would earn in Arkansas, is indicated by a red line.

The Iron Mountain Arkansas proportion of the Pittsburg rate is indicated by a blue line.

And its proportion of the St. Louis rates is indicated by a green line.

In arriving at the proportion accruing to the Iron Mountain in Arkansas, I have applied the regular divisions on Chicago and Pittsburg business north and east of East St. Louis, as shown in the company's division sheets current in 1907; and the divisions south of Texarkana as shown in their division sheets with the Southern lines.

The remainder or the proportion of the rate between St. Louis and Texarkana I have divided between Missouri and Arkansas on a track-mileage basis, which is the railroad's method in this suit, of locating revenue to Arkansas.

The chart speaks for itself.

The proportion of the rates in cents per hundred pounds is shown in figures across the top.

The lines extend to a figure which indicates the rate accruing to the Iron Mountain on its haul in Arkansas for the business for each station from each point indicated.

The rate accruing to the Iron Mountain in Arkansas on business from Chicago to Victoria, Texas, was 31 cents.

From Chicago to Tyler, Texas, it was 59 cents.

Q. That would be exactly the same movement over the Iron Mountain tracks?

A. From the Missouri-Arkansas State line on the Iron Mountain rails to Texarkana.

MR. PERKINS:

Q. You are using the first class rate?

A. Yes; that is the only rate shown on the chart. The rate used is the first class rate arrived at by adding the established differentials to the St. Louis rate on the Chicago and Pittsburg basis. And the divisions were obtained from the percentage sheets on file in the office of the auditor of freight receipts of the Missouri Pacific Railway.

The two extremes of the chart are 31 cents on the business from Chicago to Victoria, Texas, and 66 cents on business from St. Louis to Tyler, Texas.

The others speak for themselves.

COL. MOORE:

Q. They vary between those two extremes?

A. Yes, sir.

* * * * *

Q. I think it is in the record but I wish it restated here for the purpose of clarifying a situation:

The rate you have put down here is the proportion accruing to the State of Arkansas?

A. Yes, sir; on the basis I have explained, track mile division of the proportion of the rate from St. Louis to Texarkana.

Q. What I want to get at is, that track mileage basis is the one used by the railroads here?

A. In locating earnings to Arkansas; yes, sir.

See exhibit M-1. (R. pp. 2250-2255.)

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Mr. Bee, the Rate Expert of the Corporation Commission of Oklahoma, was questioned on this subject and said there was no relation between State and interstate rates other than the relation of enabling a jobber to do business, which is a commercial relation. (R. p. 1190.)

The testimony of Mr. Nay to the effect that there must be a proper relation—cost relation—between State and interstate rates in order to give value to the revenue theory, was quoted, and he was asked if there was any such cost relation and he stated it was impossible to have such a relation; that the difference in distance is so great that a rate made on one basis would not apply to the other, instancing the haul from St. Louis to Oklahoma is 600 miles and the average haul in the State 50 miles.

"If rates could be built entirely upon what we call a scientific mileage scale there would then be the chance to have each shipment pay its pro-rata part of the cost, but in the conditions existing, this freight from St. Louis comes in competition with Atlantic seaboard freight, which is handled via Galveston; it comes in competition with German and English-made goods handled in transstate steamers to Galveston, Texas, at a very low rate; practically brought over in cotton seasons as ballast in the boats.

The rates from Galveston are then made to points in Oklahoma.

The same conditions exist in New Orleans. Competition from St. Louis must meet that from Fort Smith and that from Texas centers.

The result is that the relation of the rates from St. Louis to Oklahoma do not take into consideration the local rates in Oklahoma, but the rates from the surrounding States and Territory that supply Oklahoma with the same commodities that the St. Louis rates apply to.

Q. That is sort of a trade balance?

A. Absolutely so; a necessary condition in order to market the product.

Q. Take an illustration and see if I get your idea clearly; you are familiar with the Arkansas Standard Distance Tariff?

A. I am.

Q. Take the lumber schedule that moves on a mileage distance rate, I believe, with a rough material rate into the sawmill:

Compare the rate for lumber moving from a sawmill in Southern Arkansas, moving first into a sawmill, probably from some tap line; then manufactured into lumber at the sawmill and shipped out to Little Rock, Fort Smith or any other intrastate point.

Compare that movement with a similar movement of lumber shipped from Lake Charles, Louisiana, on a 23-cent rate to Omaha.

What relation would there be between the revenue in the lumber shipment under the Arkansas Standard Distance Tariff and the relation of the revenue derived under this interstate tariff in that zone?

A. It is impossible to make a comparison. There is no comparison there.

Q. Mr. Nay says that unless there is a proper relation based on the cost of the service between the two, the revenue theory would be of no value.

A. There is no possible chance to make a comparison between those two rates. They are not related to one another in any way. One does not depend upon the other. One is not taken into consideration in making the other. They are as unlike as black and white and no comparison can be drawn between them. A man would be foolish to try to draw a comparison between two sets of rates, because no two factors are entering into the rate that are the same except the proposition of the railroad handling the business.

The rate from Louisiana points to Omaha and all intermediate points, is 20 odd cents. At which point are you going to take it to compare it with the Arkansas rate to find the comparison? There are no two things entering into it that are comparable.

Q. Suppose we get something that can be compared:

It is in evidence here that lumber shipped from points in Northern Louisiana to St. Louis would carry an 18-cent rate, but if that were shipped from the same point into Little Rock, it would carry a 22-cent rate, going over the same track, originating at the same place, part company at Little Rock, get a 22-cent rate for the haul to Little Rock and 18 cents for the haul to St. Louis; and a similar shipment that happened to be within the State, the same length of haul, would have still a different rate fixed by the Standard Distance Tariff:

What relation would you figure out existed there?

A. I have worked rates a long time, but I fail to be able to find any relation between those rates. There is a competitive condition, Judge, that creates that 18-cent rate to St. Louis, which the railroad sees fit to meet. That was years ago. I understand from traffic men that it does not exist today, but the rate exists, and that competitive condition that did exist caused that 18-cent rate from Arkansas and 22-cent rate from Texas and Louisiana fields into St. Louis. There was not any State rate in Arkansas or Oklahoma that had anything to do with the making of that freight rate, and when they came along to make the Oklahoma and Arkansas rates I do not think they took that rate into consideration.

We find in Oklahoma, in some instances, there are six cents difference between the local rate in Oklahoma, between two given points, and the rate from Texas to that point.

In one place there would be 8 cents and in another place there would be 10 cents. There was no reason for any of that. There was not any mileage condition that could possibly bring around the exact differences or anywhere in the neighborhood of the differences, and I fail to see where a man can draw a comparison between a State rate and an interstate rate and say they are related to one another, and when built upon the other, there is a condition under which a man could compare a State rate and interstate rate, possibly, on a revenue basis, to see if one was paying its pro rata part of the cost as compared with the other.

Q. What would that be?

A. The traffic moving interstate on each different commodity would have to be of the same proportion as the traffic moved in the State on the same commodity, and then the rates would have to be so far apart as was found the difference between handling State traffic and interstate traffic and if each rate was built upon that exact factor then a man could take the revenue theory and so on that basis could be divided the expense, but I know of no other conditions under which the revenue theory could be taken.

Q. That is a condition that does not seem to be existent, as gathered from your testimony.

A. It not only does not exist, but it is impossible for it to exist." (R. pp. 1190-1193.)

To follow this further, illustrated with the lumber rate, there would have to be the same proportion of lumber hauled intrastate and interstate and the same rate per ton per mile plus the extra cost of one over the other, and, in addition to that, the same profit in each rate. Without these impossible and nonexistent conditions the revenue theory has no value. (R. p. 1194.)

Mr. Nay made a statement regarding the classification being preserved in both State and interstate, and Mr. Bee was questioned regarding it; both statements are given.

Mr. Nay's statement:

"A. Yes; but by examination of the two I find that practically the same relative cost of first, second and third classes in carloads existing with the Commission as with the interstate rates.

Q. You differ with lots of these witnesses, like Mr. Watson, very much, Mr. Nay.

A. His judgment is better than mine. I say practically the same. I have not compared individual rates. But what I mean, Judge Hill, is to say, for example, here is an Arkansas rate, a rate for first class 50 per cent more than the rate for fourth class. In the interstate rate tariff the rate for first class is double the rate for fourth class.

What I mean is that they have preserved a relation and fixed a higher charge for the commodities that are classed as first class in this classification than they have for those fixed as fourth class." (R. p. 1195.)

This question was put Mr. Bee and his answer follows:

"That is the point I want to call your attention to, as to whether as a practical matter, not as a theoretical one, whether this relative cost between first, second and third class exists between interstate rates and Commission rates.

A. I do not think they do. The rate from St. Louis to Little Rock, the fourth class rate, is 45 per cent of the first class rate.

What I understand is the average haul in Arkansas on State rates, the Standard Distance Tariff shows that the fourth class rate is 66.6 of the first class rate. In other words, there is 21.6 per cent variation between the two.

Q. That is the percentage of the relation between the two?

A. Exactly.

Q. It is just another factor in addition to the fluctuation in the rates that reaches to the revenue.

A. Exactly.

Q. You do not find Mr. Nay's theoretical illustration in practice?

A. No; I have worked it down to every possible point in the voluntary rates of the railroads in Oklahoma and the voluntary

interstate rates of the roads, and there is not a single instance I have ever found that they were the same.

I went into that theory to try to find out if they were built upon such a basis.

The Chicago-Guthrie rate is 58 per cent, fourth class of first; the Oklahoma rate on the Santa Fe is 53.44 per cent.

Q. Is that a voluntary rate?

A. Both are voluntary rates. I do not see where any adjustment comes in.

The Chicago-Missouri rate—I will call fourth as against first, as that seems to be the one Mr. Nay took up—that is 40 per cent; Chicago-Guthrie rate is 58 per cent; St. Louis-Kansas City rate is 45 per cent; St. Louis-Guthrie rate is 63 per cent; the Kansas City-Guthrie rate is 65.3 per cent." (R. p. 1195.)

Mr. Bee was cross examined in great detail as to these matters and all others upon which he testified, being subjected to the most rigid and detailed and lengthy cross examination of any witness on either side, but it only resulted in bringing out almost innumerable instances, examples and illustrations of the general statements made by him. To further develop the relations of the rates on re-direct examination, this occurs:

"Q. I want to submit to you an affidavit made by Mr. C. K. Vorhees, which was filed in this suit on motion to dissolve the injunctions, before the Circuit Court of the United States at Little Rock, in the spring of 1909. I presume you know Mr. Vorhees?

A. Very well; he is general freight agent of the St. Louis & San Francisco Railroad.

Q. On page 3 he states:

"Affiant states that the representatives of the several lines discussed and considered the relations which should exist between the several class rates, and after much study and comparison with the rates in other States and with the class rates applied on interstate traffic in various portions of the territory west of the Mississippi River and other elements affecting the fixing of class rates, it was decided to recommend that the various classes should bear the following relation each to the other:

1st	2nd	3rd	4th	5th	A	B	C	D	E	Classes.
100	83½	66½	50	40	45	30	30	25	20	Percentages

Are you familiar with that which I presume is put forward by Mr. Vorhees as the ideal relation of one class to another?

A. That scale looks very much to me like what is known as the Minnesota scale, and which has stood the test of the Supreme Court of that State; I would not be absolutely positive, but it appears to me as very close to the Minnesota scale.

Q. That is presumably considered by those who made it, the ideal scale.

A. It is so considered at present, but I am sorry to say it is not in use anywhere except up there, that I know of.

Q. From page 4 of Mr. Vorhees' affidavit, I want to take what he gives as the rates that were applicable; these are all interstate rates applicable at the time of the injunction in this case; he first gives those from Memphis to Little Rock:

1st	2nd	3rd	4th	5th	A	B	C	D	E
70	60	45	36	27	29	22	18	15	12

Then the rates from Memphis to Fort Smith, distance of 302 miles:

1st	2nd	3rd	4th	5th	A	B	C	D	E
102	87	67	49	40	42	35	30	28	23

Then the rates from St. Louis to Little Rock, a distance of 345 miles was:

1st	2nd	3rd	4th	5th	A	B	C	D	E
100	85	65	49	37	39	32	27	23	18

Now, with those before you, I will ask you if they illustrate the point that you were making in your cross examination, that there was no proper relation between the classes in the interstate tariffs with which you could compare or establish a relation with the State tariffs?

A. They are. I had all those percentages figured out, but they seem to have disappeared; I read them into the record this morning; I read all the interstate rates in, and I had the State rates figured out as to the percentages of those. I believe 40 miles is supposed to be the average haul in Arkansas.

Q. Forty-two, I think it is?

A. I have taken 40 miles; now, I will call four columns, the first column will be the Memphis to Little Rock rate, the second column will be the Memphis to Fort Smith rate, the third column will be the St. Louis to Little Rock rate, and the fourth column will be the Arkansas Standard Distance Tariff No. 3, for 40 miles:

	M.-L. R.	M.-F. S.	St. L.-L. R.	A. S. D. T. No. 3.
2nd.....	86	85.3	85	90
3rd.....	64	65.7	65	80
4th.....	51.4	48	49	66.6
5th.....	38.6	39.2	37	50
"A".....	41.4	41.1	39	53.3
"B".....	31.4	34.3	32	40
"C".....	25.7	29.4	27	30
"D".....	21.4	27.4	23	26.6
"E".....	17	22.5	18	23.3

Those are the percentages of first class rate in each class. Now, that shows that the relation of the interstate rates to the State rates for the average haul in Arkansas, is not relative at all.

Q. There is not one of those interstate rates where you could make the relation so it would fit in with another?

A. No, sir.

* * * * *

Q. Are those the rates in force now?

A. No, sir; the ones in 1907, I understand.

* * * * *

Q. Were those rates Mr. Voorhees has been testifying about the interstate rates in force at the time of the injunction?

A. Yes, sir; these are the rates I took from that affidavit, and 40 miles distance rate in Arkansas." (R. pp. 1299-1301.)

Mr. Voorhees' affidavit is of record, pages 2576-2579.

Mr. Ludlam, in his cross examination, was questioned in regard to statements of traffic officials in regard to classification fixing a relation between rates, and gave this full exposition of the situation:

"A. Those same gentlemen, for instance, testified that in fixing the rates, the casualty risk was considered, and lost space was considered, and that all of the elements that would enter into the increased cost were considered, and yet I find in the actual movement of railroad traffic that that situation is not true. While it is true to a certain extent, in the great bulk of railroad movements the actual conditions do not accord with their theories.

For instance, taking the St. Louis, Iron Mountain & Southern Tariff No. 70, Texas Tariff No. 1-DD, which was issued by Mr. Cale, agent, in effect during the last six months of 1907, from St. Louis to Texas common points, a map of which is already in evidence in this case.

The Texas common points cover some 2,600 stations, I think, in Texas, and represent a movement that may vary as much as 400 miles in the length of the haul, and I find that that tariff shows that from St. Louis to Texas common points, the rate on beer in glass is 48 cents per hundred pounds, with a minimum weight of 30,000 pounds, and that the same tariff gives the rate on bar iron of 55 cents, a minimum weight of 36,000 pounds.

Now, the casualty risk on beer in glass would certainly be very much higher than it would be on bar iron, and yet beer in glass is hauled cheaper under that tariff from St. Louis to Texas Common Points than bar iron is hauled.

In addition to that, the beer rate provides for 6,000 pounds of free carriage of ice, sawdust, straw, etc., during the months of June, July, August and September, and in the other months 3,000 pounds.

In making that rate where they carry beer in glass for less than they do bar iron, they did not consider either the lost space or the casualty risk.

The same tariff quotes excelsior from St. Louis to Texas Common Points at 43 cents, with a minimum weight of 20,000, as compared with the rate already quoted of 55 cents for bar iron.

They certainly did not consider the space required in the car or the casualty risk. Excelsior would burn up very easily. Bar iron, if you had a fire, would not be an entire loss, at least.

The same tariff quotes potatoes: This is from St. Louis to Texas Common Points. The difference in every one of these hauls may exist of over 400 miles.

The tariff quotes potatoes at 54 cents, with minimum of 30,000 pounds.

It quotes horse and mule shoes at 62 cents, with a minimum of 35,000 pounds.

When I see tariffs actually made up on that basis, when the rate is actually less on potatoes than it is on horse and mule shoes, I know that consideration was not given to the casualty risk or the space required.

The same tariff shows poultry netting, 48 cents, with a minimum weight of 30,000 pounds, and iron and steel claims at 70 cents, with a minimum weight of 36,000 pounds, and when a traffic man testifies that they consider the space and the casualty risk, he is certainly not considering such items as these, and the tariffs upon which the great bulk of the business moves.

Certainly no man would claim that poultry netting required less space or that it had a less casualty risk than iron and steel chains.

The same tariff shows hollow building tile at 25 cents, minimum 40,000 pounds. Also pig iron at 33 cents, with a minimum of 50,000 pounds, and the tariff itself shows that they expect to load more pig iron in the car than they do hollow building tile, and yet the rate on hollow building tile is less than it is on pig iron.

The same tariff shows iron pipe coils for refrigerating machines at 42½ cents, as compared with bar iron already quoted at 55 cents.

The lesser rate is on the hollow and bulky stuff and the higher rate is for the more compact stuff.

These rates apply to 2,600 points in Texas from St. Louis, with a difference of over 400 miles in the possible length of the haul.

Here is sheet iron pipe, up to 30 inches in diameter, quoted at 55 cents, as compared with sheet iron flat at 62 cents.

When a traffic man testifies that they consider the weight and bulk and these things, does not imagine for a moment that they can put more sheet iron into a car when it is rolled into pipe 30 inches in diameter than they do when it lies flat?

Here is another one: Matches, from anywhere in St. Louis to any Texas Common Point, at 71½ cents. The rate on wooden toothpicks on the same tariff is 80 cents.

The casualty risk on matches, it seems to me, would be higher than it would on wooden toothpicks, notwithstanding what the learned gentleman say who have made those rates and studied these elements, and say they consider them when they can, but on the great bulk of railroad movement they don't apply them.

Here is wooden kegs, 80 cents, with a minimum of 14,000 pounds, as compared with saddlery and hardware in packages, 90 cents, with a minimum of 30,000 pounds.

The light and very bulky stuff—that is, wooden kegs, is quoted lower than the heavier and compact stuff.

Here is pickles and preserves in glass, 58 cents, with a minimum of 30,000 pounds, as compared again with saddlery and hardware at 90 cents.

Anybody, I imagine, to use the term you used a few minutes ago, that was sane, would not imagine that pickles and preserves in glass would take less space or be less liable to damage than hardware.

And that rate is from St. Louis to 2,600 points in Texas.

Here again, comparing pickles and preserves in glass, at 58 cents, with iron and steel chain at 70 cents, with a minimum of 30,000 pounds for pickles and preserves in glass, and 36,000 pounds for iron and steel chain; anybody knows that pickles and preserves in glasses are fragile and the casualty risk is greater and that they do not weigh as much, and yet the rate is lower.

Mr. Nay knows that, when he says that the expenses bear a direct relation to the revenue. What relation has the expense to the revenue, when they haul pickles and preserves in glass at a lower rate than they haul iron and steel chain, when they have to haul pickles and preserves in glass at 58 cents 400 miles further than they haul iron and steel chain for 70 cents? I might add some questions about sanity.

Another rate on baskets, talked about a great deal in this case, the rate from St. Louis to Texas points, is 80 cents. On pig lead it is 75 cents.

They may haul pig lead 400 miles less than they haul the baskets, and yet the variation in rate is 5 cents.

There has been a lot of talk about baskets and the rate taking those things into consideration; what is the consideration of a man worth that says the variation between baskets and pig leads should be only 5 cents? And in the tariff the minimum on baskets is 14,000 pounds, and the minimum on pig lead is 36,000 pounds. And, furthermore, under this tariff baskets may be hauled 400 miles further than pig lead.

Q. On the contrary, pig lead may be hauled 400 miles further than baskets?

A. Yes, sir; in either case the revenue has no relation to the expense. Here are a few samples:

From St. Louis to Atlanta, Texas—those are flat rates—apples 41 cents per hundred. This is the same tariff, No. 70, effective during the last six months of 1907—apples 41 cents, with a minimum of 24,000 pounds, as compared with wire rope, 60 cents, with a minimum of 36,000 pounds. That is, the rate on apples is only about two-thirds what it is on wire rope.

Surely nobody would say that the casualty risk would be greater on wire rope than it would on apples, and the minimum fixed by the railroad itself shows that the density of wire rope is greater, because the minimum of apples is 24,000 pounds and the minimum on wire rope is 36,000.

Again, beer in glass from St. Louis to Atlanta, Texas, is 48 cents, with a minimum of 30,000 pounds. The rate on crowbars is 62 cents, with a minimum of 36,000 pounds.

Certainly beer in glass has a greater casualty risk than crowbars, and it would seem to me that the density might enter into that question. They could hardly put as much weight into beer in glass as they could into crowbars, and the minimum shows they don't expect to.

Again, lamp chimneys are quoted at 61 cents, as compared with crowbars at 62. Whoever made that rate certainly did not give attention to the casualty risk. Any man must know that crowbars would not be more likely to get broken than lamp chimneys.

Here are a few more rates, St. Louis to Atlanta, Texas:

Common brick is 17½ cents and pig iron 32½ cents. The common brick rate carries the valuation of five dollars per thousand brick, which would indicate that the railroads themselves anticipate such a hazard of breakage and hazard of carrying bricks, but they do not expect any on pig iron, which is practically indestructible.

Pickles in glass, 39 cents, and shot in double sacks, 52 cents, with minimum on pickles in glass of 24,000 and shot of 36,000 pounds.

Here is a flat rate from St. Louis to Marshall, Texas, quite a long haul, everything the Iron Mountain hauled would come through Arkansas, as I understand it.

There is a flat rate of 80 cents, with a minimum of 14,000 pounds on any one of the following articles, either in straight carload or in mixed carload lots.

Baskets, shot, paper bags, blacking, blueing, bottles, brushes, lamp chimneys, coffee mills, crayons, galvanized iron tube, galvanized iron pails, ink, lamps, lead, cotton mops, oil cans, oil tanks, paper, pipes—smoking pipes—ropes and twine.

Now these are just a few samples. You can take almost any waybill of a railroad, take one waybill after another and compare it, and you will find the same condition existing, and when gentlemen sit on the stand and say they consider casualty risk and bulk and all those items, I know they do theoretically, but they don't in the practical application of their rates, and it is in the face of these violent fluctuations; in one case they carry baskets and shot at the same price, and in another case they carry lamp chimneys at less than crowbars—and that traffic fluctuates and necessarily fluctuates; when I give these examples, I am not criticising the rates. I do not mean they are not practical and possibly the best rates possible; that they are not compelled by competitive conditions and proper conditions, too,

but I do say there can be no relation between cost and revenue when those rates exist, and it seems to me it must be apparent to anybody, and when Mr. Nay, knowing that, being familiar with those rates, and it being his duty to check them and keep in touch with them, says you must determine your cost or how much more it costs to move State business than interstate business, on the total revenue, I say he builds up a snow man, which I think he knows is a snow man, and in the last few lines of his essay he proceeds to knock him down." (R. pp. 1353-1356.)

The record is full of much other evidence showing the nonrelation of State and interstate rates, but it is confidently submitted that what is here given completely disproves a cost—or any other relation—between State and interstate rates. This evidence proves that rates in one tariff are not consistent with another, the differences are radical and far-reaching; and there is no standard of rates or relation of one class to another or one commodity to another, so that there could be a relation of one set of rates to another. If a relation was shown with one movement, say the Texas Common Point movement, it would at once be disproved as to another similar movement, say the Memphis movement, as each are moving on rates bearing no relation to each other. If a relation was established in lumber from Louisiana to St. Louis, it would be disproved on the movement from Louisiana to Kansas City. If the relation was found on coal from Illinois fields, it would be disproved by the relation on coal from the Alabama fields.

Then what is to be done with the traffic which moves wholly interstate all the cotton and most of the grain? There is no corresponding or relative intrastate movement in these commodities.

If classification has fixed a relation, then when the commodities are controlled by the Texas classification or Louisiana classification or come from other classification territory, to which shall the Arkansas classification be fitted? There are substantial movements from all.

The relation theory falls to the ground when confronted with the concrete facts.

This completes our review of the revenue theory in all of its aspects; both sides have been presented, we think, with fairness, usually in the witnesses' own words.

It is respectfully insisted that the assignments of error based on the use of this theory should be sustained, because it is proved by a decided preponderance of the evidence to be worthless for the purposes used.

EXTRA COST OF INTRASTATE TRAFFIC.

In opening the discussion of this subject, we quote with approval this excerpt from the brief of the learned counsel for the appellants in the Missouri Rate Case.

"The issue tendered by the complainant is that it costs more to handle State than interstate freight. The evidence offered in support of that issue is that a way freight train is more expensive than a through freight train. The record is crowded with—indeed, it is devoted to the recital of details, important and unimportant, substantial and trivial, real and fanciful, nothing within the range of the imagination being omitted, to show that the way train is more expensive than the through train. The evidence so offered can not be said to be irrelevant because it does bear upon the issue. But in and of itself it is not sufficient to maintain the issue tendered. * * * Hundreds of pages of this kind of evidence were introduced by the complainant as if it were decisive of the issue; just as if the real issue is (as it is not) between 'way train' and 'through train' instead of being (as it is) 'State freight' and 'interstate freight.' "

The same confusion of ideas prevailed with all, possibly except Mr. Doddrige, of the plaintiffs' witnesses. At the time they testified, as is shown, the State had not worked out the statistics on the Iron Mountain road of the proportion of freight carried on the trains respectively of State and interstate, and was handicapped by not being able to put the exact facts before them, but the relative situation had been worked out on the St. Louis Southwestern by its officials and put in evidence as the basis of much of the plaintiffs' testimony, and when the witnesses were confronted with it, several of them candidly admitted their testimony was inapplicable to such a situation. The showing on the Iron Mountain, when finally worked out, was a vastly stronger refutation of their theories than the then available statistics.

Stronger against their theories than either of these tests was the test of Mr. Whitenton on the Rock Island, put in by plaintiffs after their other evidence was closed.

On the extra cost of intrastate traffic, the plaintiffs introduced Mr. McPherson, Mr. Doddrige, Mr. Sewell, Mr. Rawn, Mr. Ward, Mr. McKee and Mr. Whittenton. Mr. McPherson did not discuss the local and through trains as representative of the two classes of traffic as do the other witnesses. He was the first witness, and gave a great mass of details as to railroad operations and railroad facilities and the use of each by each class of traffic, some of it pertinent and much irrelevant. He based his argument on the long haul and short haul, and two terminals of State as producing the extra expense of the intrastate. He constantly compares the intrastate with the transstate as representing the two extremes. He argues that the transstate is the cheapest of all traffic, and uses less of the facilities of the road. He is a very tedious witness, and his testimony long drawn out; it is believed that these two excerpts fairly state the substance of all of it on this issue:

"Q. As to intrastate, but I am now asking you as to a comparison of the three classes.

I understand the reason you gave as to burdening intrastate traffic with greater expense, but I am asking you now for a comparison of the three grades of traffic.

A. I should say that so far as expense in Arkansas is concerned, the relation would be something like this:

In the transstate traffic there is no charge in the exhibits here for operation, for stationary service.

In the interstate traffic there would be one charge for stationary service.

In the intrastate traffic there would be two charges, in the exhibits filed here, showing the operating expenses of the road.

Q. Are these the only reasons you have for so grading these classes of traffic, according to their expense?

A. Those are the principal reasons, and the other reasons I have given would, of course, influence me in my answer to that question.

Q. What other reasons would influence you?

A. I believe I have spoken of the length of haul and of the elements that would enter into the variety of traffic.

Q. I don't quite follow you about the variety.

A. Well, the consideration of the character, value, risk, bulk, and so forth, of the freight or commodity.

Q. Does not that apply equally to all those classes of traffic except as to the length of the haul and the terminal expenses?

A. Yes, sir.

Q. Your reasons reduce themselves to the terminal proposition and the length of the haul.

A. No, sir; I can not say that. I have analyzed my reasons thoroughly, and if I should have to repeat them now it would mean repeating my analysis. (R. p. 346.)

Q. You say there would be greater efficiency of car service in interstate than in intrastate, and less cost for maintenance of equipment. That comes back to the same proposition of the length of haul and the use of terminals, does it not?

A. I presume it would, fundamentally.

Q. Your reasoning, then, in its final analysis places the difference in these classes of traffic, intrastate, interstate and transstate, upon the difference in the length of haul and the use of the facilities—terminal facilities, I mean?

A. And the consequences.

Q. Well, that would be included in it, I take it.

There are no other factors now that have influenced your judgment in this matter?

A. Yes, there are many other factors that have influenced my judgment.

Q. I would like to have them.

A. I don't know that I can reduce them to figures. They are matters of observation.

Q. Is there any further answer you would like to give, Mr. McPherson, to that?

A. There are other matters that apply to the consideration of these questions, that might exist one month and might not another month.

There is the handling of empty cars. The traffic—State traffic, is not well balanced and requires more empty cars to be handled to provide for its loading than is the case with interstate traffic.

Q. Anything else?

A. As I said before, this would be one of the additional reasons that I would have in mind. There are others, but they don't occur to me just now.

Q. The fundamental and principal one are the terminals and the length of haul?

A. The added equipment and the maintenance; the various results that are dependant on those factors and results that work out." (R. p. 348.)

It was also established by record evidence from two opposite periods of the year that the transstate did largely use the stationary facilities of the road. It was also shown that cotton platforms, cattle pens and other facilities were exclusively for the interstate traffic.

Later, it was shown by him and other officers of his company that in the exhibits here the large interstate traffic in and out of Fort Smith and Memphis (the latter being placed constructively in Arkansas), was interstate, and two terminal expenses incurred by it in Arkansas and all the transstate traffic passing through those gateways incurred one terminal expense in Arkansas. Furthermore, it was later developed that cotton—all interstate—had three terminal handlings in the State, much of grain and lumber, also large interstate movements had two, and sometimes three, terminal handlings. As they are established, it is well to bear them in mind when considering Mr. McPherson's basis reasons above quoted.

Mr. W. B. Doddrige, who had at one time been general manager of both of the railroads now before the court, was the next witness on this subject. As there is much repetition in the testimony, it is well to set out in full one witness so that the Court can get the full benefit of the reasons given for the extra cost. Mr. Doddrige states it stronger, more logically and has better experience to judge of it than any other witness, and therefore, his testimony on this subject is given in full.

"Q. Is there any difference in your judgment in the cost of handling State and interstate traffic?

A. Yes, sir.

Q. I wish you would give your views as to that difference and the grounds upon which you base them?

A. The difference in cost can not be accurately determined. Relatively but few of the expenses can be identified as directly attributable exclusively to either class of traffic. Under normal conditions, the best that can be done is an approximation based upon a system of averages.

After ascertaining certain of the elements of cost, it can be approximated by applying the per cents of expense thus obtained to those items of expenses that are common to all classes of traffic.

Individual cases have but little bearing upon the subject as a whole.

In considering this question, State lines are artificial and have no effect other than in a technical sense.

Under equal conditions as the haul shortens, either in the freight or in the passenger service, the proportional cost increases.

As the density of an evenly balanced traffic increases within certain limits the ratio of cost decreases.

The reason for this is, that a large percentage of expenses is stationary and have nothing to do with the haul.

It is the circumstances and conditions under which the traffic is necessarily handled that affects its proportional cost.

Interstate freight is in two classes, each handled under somewhat dissimilar conditions.

That part of which is transported across the State, as upon a bridge, and that part which originates or has its destination within the State, and in that respect is local freight.

Transstate freight has a small percentage of terminal expense within the State; and the interstate freight has but one terminal expense.

But for economical reasons both classes of freight are sometimes rehandled at divisional or junction points.

The great bulk of intrastate freight is carried upon local or way freight trains, in common with such interstate freight as there may be for distribution or collection.

This train is run daily, except Sundays and holidays, as nearly as practicable in daylight only. It does the local switching along the line and any other local work that may be required. The train crew load and unload less than carload freight.

It is a special, arbitrary freight service, run without regard to the tonnage-load to be moved; and, therefore, as measured by its performance is a very expensive class of train.

Upon branch lines the local trains do all the business, as a rule.

The through trains are loaded with transstate, interstate, and a small percentage of State freight. They are started from massing points and are not usually run unless there is a tonnage-load, or run for the purpose of balancing the power.

The intrastate freight traffic is the shortest haul business handled by the railroads in Arkansas; and for that reason, if for no other, is the most expensive.

It is true that quite a large amount of interstate freight is carried upon local trains, but the proportion of that class of interstate freight to the total of interstate freight is very small.

Q. Can you state approximately what portion of the freight carried on local trains belong to each class of traffic; that is, intrastate and interstate?

A. I have no definite information upon that point; but, based upon my general knowledge and experience with railroads in Arkansas, I should judge that the greater proportion of the load of the local trains is interstate freight.

But, at the same time, the bulk of the State freight is carried upon local trains, and but a small proportion of the total interstate freight is carried on local trains.

Q. What proportion of the intrastate freight is carried in local trains; that is the question I want you to answer.

A. On the St. Louis Southwestern Railway 8 per cent of the interstate freight is carried upon local trains; and 92 per cent is carried upon through trains—as shown by their test made in October, 1908.

I can not state what the proportions are on the St. Louis, Iron Mountain & Southern Railway, but the exhibits filed by that company show that a little less than 20 per cent of the total tonnage is local or intrastate; and that something over 80 per cent is interstate.

It is also shown in evidence that 51 per cent of the traffic of that road in Arkansas is transstate.

It would, therefore, follow that a very small proportion of the interstate freight is carried on local trains, but I can not state what that per cent is.

Q. If it is true that a small proportion of the interstate freight is carried on local trains, does it not follow that a very large proportion of that class of traffic is not subjected to the local train expense that accrues against local traffic, and to the increased expense growing out of the difference between the long and the short haul?

A. That is true. Only a small percentage of the interstate traffic is subjected to the high cost of the local trains.

Q. In what manner does the terminal expense increase the expense of conducting local traffic?

A. All the terminal expenses are the same, without regard to the length of the haul; therefore, these expenses per ton per mile increase as the haul shortens.

What is meant by "terminal expense" is the point of shipment and point of delivery. The terminal expense includes labor at stations, supplies, and all the facilities used in the transaction of business, such as house tracks, team tracks, yard engines, switchmen, and the cost of the maintenance of these structures.

The average length of haul on the freight business handled by

the St. Louis Southwestern Railway in Arkansas, as shown, is, interstate 231 miles; intrastate 44 miles.

The average interstate haul is 5.3 times greater than the State haul.

The average length of haul on the freight business handled by the St. Louis, Iron Mountain & Southern Railway in Arkansas, as shown in the exhibits filed by that railway are interstate 224 miles; intrastate 70 miles.

The average interstate haul is 3.2 times greater than the intrastate.

Therefore, the terminal expense in the case of the St. Louis Southwestern Railway is 10.6 times greater than the terminal expense of the interstate freight.

In the case of the St. Louis, Iron Mountain & Southern Railway it is 6.4 times greater than the interstate freight carried by that company.

This estimate does not makes any allowance for the absence of terminals in the transstate freight by either company.

Q. Do the additional terminals involve a large element of additional expense in the transportation of the local or State freight?

A. Yes, sir. I am not advised of the exact percentage that the terminal expense bears to the whole expense of operating the railroads, but it is usually somewhere in the neighborhood of between 15 and 20 per cent." (R. pp. 457-460.)

Analyzing these principal statements one by him in the light of the exhibits and established facts:

(1) That part which is transported "as upon a bridge." This is the origin of the "bridge theory" of transstate freight and its lesser cost, which is so utterly overthrown by record evidence as to become ludicrous. It is presented at great length hereafter.

(2) He says: Transstate freight has but a small percentage of terminal expense, and the interstate but one. All transstate has an average of three divisional handlings in the State, which are almost, if not quite, equal to terminal handlings. Much interstate has two and three terminal handlings.

(3) He says: For economical reasons, both classes of freight are sometimes rehandled at divisional or junction points. The through freight divisions are on an average 98 miles, the haul through the State about 300 miles. The local freight divisions are on an average 74 miles. The average intrastate haul is 70 miles on one road and less on the other. The intrastate freight on an average can have no divisional handling, that having one or more is compensated by that having none. The transstate handlings have these and all the interstate—224—will average two.

(4) The great bulk of interstate freight is carried on local trains: The statistics show that on the St. Louis Southwestern Railway 22 per cent is carried on the through; and on the Iron Mountain 61 per cent is carried on the through.

(5) He says: The greater proportion of the load of the local trains is interstate, but the bulk of the State freight is carried on the local. Mr. Doddridge is the only witness for the plaintiffs who recognizes that a greater proportion of the load of the local is interstate, but he misses the other proposition almost as badly as the other witnesses for the plaintiffs, that the bulk of the State freight is carried on the local; he was correct as to the St. Louis Southwestern Railway, there being only 22 per cent of the State freight carried on the through, but on the Iron Mountain 61 per cent of the State freight was carried on the through.

(6) His calculation to show that the terminal expenses increase by average length of haul is an egregious blunder. The reasoning, using the Iron Mountain figures, is, that the average interstate haul is 224 miles, and the intrastate 70; therefore, each ton of intrastate freight is hauled 3.2 times as far and handled 6.4 as much. But distance is not a factor in this handling; this is not moving, but stationary expense. The average length of the haul has nothing to do with this terminal handling, the State freight is handled twice—whether the haul is 10 miles or 100 miles—the interstate (saving many exceptions elsewhere mentioned), is handled once—whether hauled 100 or 300 miles. The character of freight—intrastate or interstate, fixes its amount of handling in the State and the character and movement fixes generally its handling. As soon as a shipment is determined as intrastate, it is at once apparent it has two terminal expenses in the State. As soon as it is determined as an interstate, one; unless transstate, then none, but numerous divisional handlings; much interstate and some transstate has three handlings, cotton from Louisiana or Oklahoma to Boston, compressed in Arkansas, while transstate, would have two terminal handlings in Arkansas. Wheat from the northwest going into an elevator at Little Rock and resold in the State would have three terminal handlings in the State although an interstate shipment. All the Fort Smith and Memphis traffic—all interstate—would have two terminals so far as expenses go in Arkansas. But aside from these physical facts changing the force of the statement, the proposition is *per se* wrong, even assuming all interstate one and all intrastate two. The terminal handling at origin and destination is a matter of handling tons and cars, not ton mileage. The State, in its plan of division of expenses puts station expenses—the item to which the instant kind of terminal expenses is applicable—upon a ton basis. It counts each intrastate ton twice, and each interstate ton once, and divides accordingly. This accurately divides this expense between the intrastate and interstate. When it takes three intrastate cars to equal one interstate, then to the intrastate six terminal charges accrue; when one intrastate car equals one interstate car, two accrue against one. If the average hauls are made up of three cars in each class of traffic, then the intrastate will stand two charges to one instead of six to one. If more it will accordingly

be charged with more. It is a question of tons—not miles. There is an absolute lack of relation between tonnage and average length of haul. Mr. McPherson used the same argument in piling up extra expense to intrastate. (R. p. 323-326.) He takes the same average hauls, but resolves the fraction against the intrastate, using four intrastate shipments to equal the mileage of one interstate. He takes one car of 20 tons moving from Texarkana, Texas, to Nuckells, Arkansas, 224 miles, and four cars of 20 tons each moving between Nuckells and Corning, 70 miles, and an intermediate movement to equalize distance. He explains the identity of the service and argues that it was repeated eight times in the State for the four cars of intrastate freight as against one such service for the one interstate. He takes the average mileage in interstate traffic and average mileage in intrastate traffic, and then increases the intrastate tonnage so as to bring the two classes together on an equal ton mileage. The ton-mileage has nothing to do with producing these expenses. Mileage does not produce nor affect them. At page 315, discussing the ton-mile basis, Mr. McPherson says:

"The ton-mile basis makes no provision for terminal expenses, because there are no ton-miles at terminals that represent the expense.

"It only attaches as a unit of measurement between two given points, the beginning and the end of the journey, but does not consider the expense at either end. It can not measure the expense at either end."

Yet, both he and Mr. Doddrige use the ton-mile basis here to work out extra expense against the intrastate. We have gone into this fully at this time as it is the first appropriate place to point out one of the errors of the trial judge. Doubtless misled by the plausibility of the argument of Messrs. Doddrige and McPherson, he rejected the State's plan of dividing station expenses (tons, multiplying the intrastate by two), and adopted the ton-mile, multiplying each intrastate on the Iron Mountain by six, representing three times the haul. (R. p. 2628.)

Elsewhere we have discussed the ton-mile as a possible factor to divide property; then it would be ultimately representative of the whole freight traffic—the result of use of the freight equipment and facilities. To use it as a factor to divide any expense except train expense when it may be used "as a unit of measurement between two given points"—has been so heartily condemned by Messrs. McPherson, Doddrige and Nay, that its use here to augment terminal expenses against the intrastate traffic is *contra bonos mores*. The State, probably giving too much weight to the testimony of these learned experts on the iniquities of the ton-mile as a basis to divide expenses, in its plan only used it "as a unit of measurement between two given points;" but it seems on further reflection that to some items it would be appropriate, certainly more so than the revenue; but its vital weakness is in applying it to terminal and station

expenses, as so forcibly pointed out by them and yet here is where they use it to point the tale against the intrastate.

Mr. Doddrige's evidence on the passenger side of the question, follows:

"Q. Is there any difference in the cost of transporting State and interstate passengers?

A. Yes, sir.

Q. What are the reasons that constitute or cause that difference?

A. The general principles affecting the ratio of extra cost, short haul freight traffic, applies to the short haul passenger traffic; but not in so pronounced a degree, as the elements of weight and time are absent.

The length of the journey of each State passenger upon the St. Louis Southwestern Railway, for the year ending June 30, 1908, was 23 miles.

The length of journey of each interstate passenger was 121 miles.

Therefore, to produce an equal number of passenger miles 5.3 State passengers were handled to one interstate passenger.

For the St. Louis Iron Mountain & Southern Railway, the average journey was for a State passenger 30 miles.

And for an interstate passenger 118 miles.

To produce an equal number of passenger miles, 3.9 State passengers were handled to one interstate passenger.

The use of two terminals for each State passenger, which includes ticket sellers, baggage handlers, the maintenance of depots, yard service, light, heat, and in some cases extra daily train service upon the main line, run especially to accommodate local traffic, increases the cost of train service arising from the frequency of stops to receive and discharge the short haul passengers and baggage; which includes the wear and tear of equipment, and the increased road speed to make scheduled time; the constitutional requirements providing for separate depot accommodations in coaches.

The increased casualty cost arising from the increased number of passengers boarding and alighting from trains at stations.

The carrying of passengers upon mixed trains.

Q. Those are all elements which you think enter into this increased cost?

A. Those are all elements upon which the extra cost is based.

Q. Are there any other elements that cause extra cost in the carriage of intrastate passengers, such as stations, yard service and things of that sort?

A. I have referred to those elements in a general way.

Q. What do you think is the difference in cost, Mr. Doddrige?

A. In my opinion the proportional extra cost in Arkansas will range from 20 to 30 per cent." (R. p. 464.)

On cross examination, Mr. Doddridge modifies this statement as to ticket sellers at two terminals, and as to yard service, and as to separate coach laws. (R. pp. 487-490.)

(1) He attempts to use the passenger-mile basis here to show extra cost of intrastate as he does the ton-mile on the freight side.

(2) On the St. Louis Southwestern Railway, there are no through trains, and on the Iron Mountain only 8 out of 56 are through trains. The local passenger train, carrying indiscriminately interstate and intrastate, is not a factor of extra expense to the intrastate here as it attaches alike to both.

(3) Owing to the large passenger traffic in and out of Fort Smith and Memphis charged with two terminal handlings, and the undisputed evidence of Maurice Wright explaining the handling of interstate and transstate passengers at Little Rock and other junction points, it is established that little, if any, extra expense can attach on that score. In the State's plan of separating expenses, it, however, charges itself with two terminal handlings to one for the interstate; an allowance which will manifestly more than take care of all extra cost.

Mr. I. G. Rawn, President of Chicago, Indianapolis & Louisville Railway Company (Monon Route), testified for the plaintiffs, his testimony beginning at page 672.

He was asked the difference in cost of operating local freight trains and through freight trains, and explains at length and in detail the greater expense incident to the operation of the local freight train (R. pp. 673-676.) Briefly, they are: The greater time on the road of the local between given points, due to stopping for local work at stations, incurring greater time for the employees; rate of pay is higher; greater consumption of fuel and supplies; additional switching at local stations; greater capital invested in locomotives and cars for local service on the road; larger station forces consequent upon local business; the train load of the local much less than in the through; through trains run only for a load while the local run is scheduled irrespective of load; even if local is loaded full its full load is not equal to full load of through; consequently less efficiency for the locomotive; he considers no additional maintenance of way expense of the local over the through, but an additional expense for maintenance of locomotives; additional sidetracks and cost of maintenance for local traffic, but expense of passing tracks for the through would equalize this.

It will be later seen that every item mentioned by him is properly cared for in dividing costs between local and through trains. After he finished his dissertation on extra cost of local trains, he was asked what relation, if any, there is between local and through traffic, and State and interstate, and answered:

"A. For the purpose of determining the cost of operation of transportation, the question of State and interstate traffic is not the method of consideration. The method is that of through and local business.

I would consider, however, that the relation (if it may be termed so), between through and local business, and State and interstate business, would be that State business might be termed a local business, and interstate business a through business.

I would not consider those lines as accurately drawn, but State business is of necessity limited in territory and extent, and so is local business. So that I presume, to a very great extent, on railroads throughout the country, the local freight trains as a rule would be confined to within States, although that would not wholly apply, and railroads do not run their local freight trains with a view to confining them within State lines. But to my mind, there would be a relation between State and interstate business, and through and local business, in that State business would very nearly conform to what we term local business, and interstate business would ordinarily conform to through business; if that answers your question.

Q. I wish you would state, taking into consideration the direct train expense and other expenses, such as terminal at stations, the difference in the cost of maintenance, either of way or equipment, and all the elements that have been mentioned by you, what difference you estimate there is in the expense of conducting local as against through business?

A. That subject has been a matter of very great consideration on all railroads for a long period, for many reasons and many purposes, and my own deduction and investigation leads me to say that I have regarded—and it has been universally regarded—that the operation of local freight trains—the direct cost of operation of local freight trains, as compared with through freight trains, is a minimum of 3½ times more.

That has been a generally well accepted basis, I think I am safe in saying, excepting further, that there are a number of elements entering into the cost of local freight trains, as compared with through freight trains, that increases that difference."

He sums up the full difference, adding station expenses, capital, etc., as five times. (R. p. 676-8.) On cross examination the proved facts in regard to lumber, grain and cotton—interstate movements—largely handled on the local trains were stated to him, and he was asked if, in view of these facts he regarded a close relation as existing between the local train and intrastate traffic and answered:

"A. I stated a moment ago, or intended to state, in answer to your question, that while there is more or less interstate business moving on local trains, as you say, I give it as my opinion that the great preponderance of freight moved on local freight trains, is State freight and not interstate. That is my best judgment. The question of territorial boundaries of local freight trains has never been, as I said be-

fore, regarded as between State borders; but I think that investigation throughout the country will show that perhaps more largely confined to within State borders.

Q. I understood your general proposition, but I was calling your attention to what was in evidence in this case, as to conditions in Arkansas, and asking you—assuming these conditions that I have stated, to be true—if that would not disturb somewhat the relation which you have given of interstate to local, as you generally find it?

A. Well, I should think if it is shown to be a fact that the local freight trains in the State of Arkansas actually handle the preponderance of interstate freight, that is one thing, but I would have to say that in the first place, I have no knowledge of Arkansas, and in the second place, the statement you make with reference to local freight trains in Arkansas has not been my experience during my time.

Q. That is what I supposed, and the reason I was stating to you what we conceive to be the facts that have been developed here, and ask you to give your views, assuming the facts I stated to you are correct.

I take it those are not what you have generally found to be the case?

A. No, and therefore it seems to me that I am not competent to discuss a matter with which I am not at all familiar.

Q. I would not think of questioning your competency to discuss these propositions.

A. I thank you very much, but I question my own competency, because I have no knowledge of them.

Q. Then, if the situation in Arkansas is about as I have outlined in these questions, you would not consider yourself competent to discuss the relation of the local to the through?

A. No, because it is at variance with my experience. (R. pp. 681, 682.)

W. J. McKee, General Superintendent of the Missouri Pacific, formerly division superintendent in Arkansas, next testified, beginning at page 687.

He was questioned as to local and through trains, and character of freight carried on each, and says the freight on through trains is mostly interstate, very little intrastate carried on it. (R. p. 689.)

The local train he says largely consists of "less than carload freight" (L. C. L.) (R. p. 690.)

He repeats practically the same reasons given by Mr. Rawn for the greater expense of local and through trains, running in the additional theory that the greater expense of L. C. L. freight on it than the through. (R. p. 690, 691.) In fact, he regards the local as principally a vehicle for L. C. L. freight. It is in evidence that taking the two test months and calculating from their statistics as was done by Mr. Nay, there is proportionally more L. C. L. interstate than State (R. p. 2059), and if the local train is the vehicle of the

L. C. L., it is more for the interstate than the intrastate. Moreover, the only statistics in the case giving amount of L. C. L. on through and local trains is the St. Louis Southwestern Railway test month statistics, exhibits 19, 20. It is seen therefrom (R. p. 2377), that the through train carries 80 per cent of the L. C. L. and local 20 per cent of it.

Mr. McKee also testifies that the local passenger train is the more expensive and gives his reasons therefor. (694.) As there are only eight through passenger trains on both these roads, that point is not worth considering in this case. It is, however, rather amusing to see that the General Superintendent of this system regards the passenger traveling on local passenger trains as synonymous with intrastate passenger. (R. p. 695.) If he is correct, the interstate passenger traffic is certainly a negligible quantity.

He says the interstate freight carried on local trains "is so small it is hardly a mathematical problem." (R. p. 701.)

The tests show 72 per cent on Iron Mountain of the load of the local is interstate, a pretty fair "mathematical problem." Another case of theory v. fact.

Mr. Edmund D. Sewell, assistant to the President of the Chicago, Milwaukee & St. Paul, and vice president of Chicago, Milwaukee & Puget Sound Railway Company next testified, page 703:

Over objection, questions were put to Mr. Sewell as to the difference in manner of conducting State and interstate business as if there was separate trains for each class, but he answered them as if he understood all local freight loads were intrastate and all through loads interstate. (R. p. 704-710.)

"Q. Now, all your testimony that has been given heretofore, has not been in relation to State and interstate, but has been in relation to through and local?

A. No, sir; in connection with State and interstate.

Q. Let us get that clear now: I understand these expenses that you put there as four times, was on local trains as against through; is that right?

A. Yes, sir.

Q. You are treating that as synonymous with State as against interstate?

A. Yes, sir.

Q. That is, you are disregarding the amount of interstate traffic of the local train, and disregarding the amount of intrastate traffic of the through train?

A. Yes, sir.

Q. I believe you stated a while ago that you did not know the conditions in Arkansas?

A. I did." (R. p. 711.)

A summary of some of the established facts regarding the situation in Arkansas together with the statistics of the railroad in exhibits 19 and 20 (R. p. 2375-2377), were put to Mr. Sewell and he said:

"A. If the conditions in Arkansas are such as you have described, and as the evidence states (which, of course, I do not question), and there is no other situation which would offset that to any considerable extent, the testimony I have given would not apply to the conditions in Arkansas.

Q. What would you say, in view of what I have stated to you to be what I understand is the testimony here, and in view of these statistics of the railroad company, of this four times as much to operate State as interstate freight?

A. I could not tell at all without having their traffic figures and knowing what their traffic was as a whole." (R. p. 715.)

Mr. Frank E. Ward, General Manager of the Burlington line east of the Mississippi River, was the next witness. He was one of the railroad's principal witnesses both in chief and in rebuttal. His testimony in chief begins at page 722.

Mr. Ward very intelligently and fully discusses operation of local and through trains and greater expense of the local and the reasons therefor. Then this occurs in his testimony:

"Q. Do the local trains carry any interstate freight and do the through trains carry State or local freight?

A. Yes, sir; I think ordinarily there is some interstate freight in local trains; and some State freight in a good many through trains. But I should say, as a rule there is very little State freight in through trains." (R. p. 725.)

In view of 61 per cent on the Iron Mountain of intrastate freight on the through train, his testimony loses force.

Then he discusses the greater expense of short haul (intrastate), compared with long haul (interstate), and difference in terminal expenses.

He says that interstate freight never has more than one terminal handling, and transstate none. (R. p. 728.) He badly misses the mark on that so far as Arkansas is concerned. He estimates State freight as costing five times the interstate. (R. p. 729.)

Then he takes up the passenger side of the problem. He stresses the expensive local passenger train running only in daylight. (R. p. 729.) Then he discusses the added expense of short haul against the long haul. He concludes with an expression of opinion of 40 per cent to 50 per cent extra cost for intrastate passenger. (R. p. 730.)

On cross examination, this occurs:

"In speaking of these five times more cost for handling State freight, you mean by that freight which is carried on the local, don't you?"

A. Well, I took that into account as the principal item going to make up the total of State freight; and meant it in the broad sense

that it does cost in my opinion five times as much to carry State as interstate, taking that element into consideration.

Q. Basing that principally upon the proposition that you think the local train carries largely State freight?

A. Yes, sir.

Q. And the extra cost is the extra cost of operating the local train?

A. Well, yes; the local train and all the freight that is carried on that local train.

Q. There is no difference in the cost of freight, State or interstate, *per se*?

A. No, sir; it is because of the different character; State being short haul and interstate being long haul." (R. p. 731.)

Mr. W. M. Whitenton, General Manager of the Rock Island line in Arkansas, Oklahoma and Louisiana, was the last witness on this subject. His testimony begins at page 749.

Mr. Whitenton gives a more detailed and exhaustive analysis of the extra cost of the local freight over the through freight than any of the witnesses. (R. p. 751-754.) He gives 13 separate items. On the passenger side he gives seven separate items. (R. p. 755.) His testimony forcibly brings to mind the quotation with which this chapter opens:

"The record is crowded with—indeed, it is devoted to the recital of details, important and unimportant, substantial and trivial, real and fanciful, nothing within the range of the imagination being omitted to show that the way train is more expensive than the through train."

As applied to the established fact that 61 per cent of the intrastate freight is carried on the through trains, and 72 per cent of the load of the local is interstate, on the Iron Mountain, the whole force of Mr. Whitenton's testimony is broken when it is seen to be based on a radically different thought of it.

Q. Mr. Whitenton, is there any difference between State and interstate traffic, in the handling of it?

A. Judge, I don't know that I just get your meaning.

Q. Does not State and interstate traffic move in the same cars, by the same men, and pulled by the same engine?

A. Yes, sir; that is true.

Q. In both the questions and answers in your testimony there seems to be an interchange in the word local as compared to State, and through as compared to interstate; do you mean it that way?

A. I mean this: That in my belief the State business is largely a short haul business, and for that reason it is naturally handled on the local freight trains. That is the only distinction I make between the handling of State and interstate.

Q. The length of the haul?

A. Yes, sir.

Q. And owing to the length of haul, would more probably be handled on local trains?

A. Yes, the short haul business more naturally falls to the local freight train in the conduct of the business. (R. p. 758.)

Mr. Whitenton says cotton has three terminal handlings in Arkansas before it leaves the State. (R. p. 763.)

Grain in intrastate traffic, he says, is negligible, and that the movement into the State is very large, and it usually goes to Little Rock into an elevator, unloaded, reloaded and shipped out again, three terminal holdings in the State. The great majority of lumber goes out of the State, and in its movement, it first is carried to a mill, there unloaded, planed and reloaded and shipped into other States, three terminal handlings. (R. p. 763.)

Mr. Whitenton's test of the loads of local and through on his line is set out in another connection.

This completes a summary of all the plaintiff's case regarding extra cost.

EXTRA COST OF INTRASTATE.

The State did not rely upon opinion evidence on this proposition, and, as will be seen, developed the actual situation and presented facts against theories, but it was not without *State's Opinion Evidence*. opinion evidence on the subject, and from men better posted as to actual conditions than the presidents, vice presidents and general managers of other roads whose testimony has just been summarized.

Mr. James C. Lincoln, Traffic Commissioner of the St. Louis Merchants' Exchange, was put on the stand by the State as to rate matters, but plaintiffs cross examined him at length as to operating questions, and as he had had a long and varied railroad experience, he was a thoroughly qualified expert. In his cross examination, he was asked if there was not a very large increased expense in operating a local as distinguished from a through freight train, and says:

"A. There is a larger expense in handling local as compared with through trains.

Q. I would like you to state, in a general way, what produces that increased expense in the operation of local trains?

A. The increased expense in connection with the operation of local trains is the constant service that is required at the local points as they go along, in stopping trains and starting trains, as well as the switching service. There is also some additional expense attached to the conduct of the trains in the way of expense of employees' overtime, usually. (R. p. 967.)

* * * * *

Q. You would say then, that there is very considerable increase of expense in the operation of local freight trains over through trains, would you not, Mr. Lincoln?

A. No, I would not say it was so considerable. When I say that, Judge, I do not want to be misunderstood in it.

Q. And I do not want to frame my question so as to mislead you.

A. I do not want to be misunderstood in connection with the operation of the local trains. The local train is handling interstate and State business at the same time; the expense goes to both.

Q. I am not speaking now of expense as applied to State and interstate. I am speaking of operating local—

A. The expense of operating the local trains is greater than the expense of operating the through trains.

Q. Is it not very considerably greater?

A. I don't think it is, but I am not competent to testify on the measure of it." (R. p. 968.)

The various items making up the extra expense of the local train of which he was cross examined in detail, and the double terminals for intrastate, the consequent greater expense of the short haul, the lighter loading of short haul traffic, and those various other matters, he had in mind when he testified that the higher intrastate revenue representing the short haul more than compensated for the extra cost. (R. p. 915.) He also testifies that the cotton movement in Arkansas is very large, and that there are three terminal handlings of it, and the first movement is always L. C. L., and the whole traffic is interstate. Most of the grain also has three terminal expenses, and it is handled on transit rates, and is interstate. (R. p. 984.)

Mr. Willmering, Auditor of the Oklahoma Corporation Commission, was cross examined in regard to all the items in the State's plan of separating expenses, and gives this pointed testimony, which is pertinent to this issue:

"Q. I observe that you make no allowance on account of local service in your division, you divide it straight:

In exhibit K, filed by Mr. Wharton, he adds 50 per cent to local engine mileage for station switching.

A. Yes, that is an arbitrary allowance and it is favorable to the interstate business. It is following the theory advanced by the railroad experts and it is unfair to the State.

Q. Why.

A. Because it is both, foolishness. The idea of wanting to charge additional maintenance for switching expense to local freight trains! Any one that has been in the railroad service and observed these things daily would know that it is humbug.

Q. You think there is no more station switching on local than on through?

A. Certainly; but the local trains are doing switching for the through trains in reality, under existing conditions—

Q. What do you mean?

A. A through train sets out—a carload of interstate freight. That through train don't stop there to spot that car at an industry

track, or spot it for unloading or loading at the team track or the industry located at that station; but the way freight train, which is the workshop of a railroad, it goes along, follows that through train and performs that switching service—

Q. You think an extra charge ought to be made the other way?

A. I believe there ought to be some plan devised where the time employed by the local train crew to that particular character of switching—which ought to be ascertained and could be, for the future; for the past there has been no record kept of it.

Q. In your view, it should be charged to the through instead of the local train?

A. The through train should be charged in reality for whatever service was performed by the work train.

It is a misnomer, calling a way freight train a local train and trying to confine it exclusively to State traffic, which, by inference, a great many railroad experts have tried to either mislead the layman; it is unfair on the part of the railroad experts by inference to assign all this extra cost to a local freight train, and by inference allow some one to believe—who is not familiar with the real conditions—that this local train performs exclusively service for State business. It is a wrong inference for those railroad experts, and it is unfair for them to assume anything of that kind." (R. p. 1141.)

In redirect, Mr. Willmering stated succinctly his views on this subject as follows:

"Q. I don't know that I quite understand your position on the local and through service, and I will state what I gather, and ask you if it is right and if not, wherein it is wrong; that you don't think it right to charge these additional sums which have been called arbitraries, like 50 per cent local train for extra switching, and others, because you regard the local train and the through train as both doing State and interstate traffic, one helping the other one, and that the difference, if any, in the expense of local over the through, should not be recorded in the final division between State and interstate?

A. That is the position I have taken, yes, sir; that the services are largely reciprocal; there is a sort of reciprocity, and at division points where they employ yard engine service, it is true that the yard engine performs the switching for the local trains as well as the through trains, but all the switching that is performed for through trains as a rule, with very few exceptions—as a rule all switching performed for through trains, interstate business, is completed by local way trains, at way stations." (R. p. 1159.)

Mr. Bee was asked how much of the switching is done for the through train by the local, and says:

"A. Virtually all of it. All cotton is picked up and carried to a division point, at least. The through train sets out cars at a terminal point and the local train takes them out to their destination.

The local train sets the empties for the grain and for all of that movement and brings it back into the terminal and gives it to the other train. But for a local train, it would be impossible to run through trains. There is no question about that. They might run through trains in Arkansas—in Missouri, without a local train in Missouri, but if they did they would have to have them in Arkansas. They might cut them out of one State, but they could not operate through freight trains unless they had local freight trains.

Q. I will call your attention to another matter that is in evidence, and ask you if you know anything about that; that is the lumber traffic:

It is in evidence here that logs are hauled to a sawmill in the local train. They are to be manufactured and shipped out to St. Louis and outside of the State. They are carried sometimes to the nearest division point on local trains, and sometimes on the local train directly to the sawmill point; are you familiar with that situation?

A. I am. The through train handles nothing except freight that originates for it at big towns, unless in exceptional instances if there is a carload of perishable merchandise for some small jerk-water station. The through train may get instructions to stop there and get that; it has been set out—what we call “first out” at the end of the track; they have to make one cut; they pick it up and then go ahead. That, however, is exceptional.

The local train is supposed to clear up its division and get everything into the terminal, north or south or west, whatever direction.

Q. The local train is clearing up the way for the through train to go out without any interruption?

A. Yes, the local train lays on the side until the through train gets through. The through train has a time-card right which the local train has to regard and has to observe. She starts from one station to another and finds a little more work at a siding than she expected; her time is up; she can not make the next station. The result is she goes into a “hole” and stays there for one, two or three hours, waiting for the through train to come along, sometimes having a man walk to the next station to telegraph—

Q. It is sort of a “beast of burden?”

A. Yes, and it is the one that you can never put the last straw on the camel’s back and break it.

Q. Is it serving State and interstate, both?

A. So inseparably that you can not find it.

Q. I would infer from some of this testimony that it did not serve the interstate?

A. The man who testified to that either did not know or was not fair.

Q. Of course he was fair. He was going on a theory, probably.”
(R. p. 1199, 1200.)

Regarding L. C. L. freight, he explains at length that much of it has three terminal handlings in the State. The summary of his statement is this:

"Q. In comparing the terminal handlings of State and interstate L. C. L. freight, you attribute two terminal handlings to State freight, and what number to interstate?

A. Some of it will have one, some will have three; I went into that largely this morning.

Q. You base your assumption of three handlings upon the proposition that you described here this morning, it was loaded, came in, unloaded, and perhaps back-hauled?

A. Yes, sir; and the further condition of traffic from Fort Smith and Memphis which I did not take into consideration this morning." (R. p. 1305.)

THE "BRIDGE THEORY" OF TRANSSTATE TRAFFIC.

One of the basic proposition in the plaintiff's case is, that trans-state freight passes through the State "as on a bridge." The conclusion reached therefore that no terminal and little station expense attaches to it; comparatively few of the facilities of the railroad are called into play in handling it, and it is by far the least expensive freight hauled. The transstate being 51 per cent of the Iron Mountain traffic, and it moving through the State on a bridge leaves the great mass of the expense to attach to the strict interstate and the intrastate, and principally to the latter.

Mr. Doddridge is the father of the bridge theory in expression, and Mr. McPherson in statistics.

The State met this testimony with an examination of the records of the transstate movement on the Iron Mountain road.

The data gathered is not disputed and is conclusive on this question, and also furnishes proper bases for distribution of yard expenses and station expenses.

The testimony of Mr. McPherson on this subject, and of Mr. Doddridge is found at page 1432—where it is repeated—and then this testimony was adduced from Mr. Hamilton, who got his facts from the records of the company. It may be explained here that under orders of Court, the State's accountants had full access to the records and books of the road:

"I will ask you if you have made any investigation of the records of the facts in regard to this theory upon which these gentlemen have spoken, as to transstate business passing through the State as upon a bridge, and if you can, give us the results of your investigation upon the facts, as opposed to the theory upon that subject."

A. I have here a record of about 3,000 cars, 1,454 in October, 1907, and the balance, 1,560 in March, 1907, a spring month and fall month.

Q. Describe how you got at that movement and the result of it?

A. In endeavoring to see just how long it took this transstate freight go through Arkansas, and how long it was on the company's rails, in Arkansas, in completing its journey across the State, and how long it remained inside of the State, we had recourse to the waybills for what we thought were typical movements of that character of freight. That is, we took in the October month, billing from Texas roads, going to the Iron Mountain at Texarkana, and moving via Little Rock and Van Buren, and on out into Oklahoma and beyond, destined to Kansas City points, in that territory or beyond.

We took the movement from Louisiana, crossing the State line some distance below McGehee, and leaving the State line five miles above Van Buren, destined to Kansas City and points in that territory.

We took the movement from Memphis, via the Memphis division, main line and the White River division, the last terminal in the State being Cotter, going to Kansas City and points in adjacent territory.

We took the movement from beyond Texarkana, straight up the main line into Missouri, the last terminal in Arkansas being Hoxie.

We took the movement originating in Louisiana and moving via McGehee, Little Rock, Hoxie and into Missouri, and the movement originating at Memphis or beyond, moving via Bald Knob, Little Rock and Van Buren, and so out of the State to Kansas City and adjacent points. By the way, that movement from Texarkana to Hoxie, if I said that was headed to Kansas City, that was in error; it was to St. Louis.

We took the movement southbound from the White River division, main line, Little Rock, and out into Louisiana by the way of McGehee, that being the last terminal.

The movement from Van Buren, coming from beyond, and going out into Louisiana through McGehee.

The movement coming down the main line from Missouri and going off into Texas at Texarkana.

The movement from Missouri and beyond over the White River division, main line and Memphis branch, to Memphis and beyond.

We went to the billing without knowing where we were going to find the movement of the cars, abstracted all the cars for a period of fifteen days, then traced the cars into the first terminal in Arkansas, and out of the last terminal in Arkansas, most of them being very close to the border, because the only record we could get was at the last terminal.

The record we have of their movement is actual, it is taken from the wheel reports, showing the movement in trains into the first terminal, and the movement out of the last terminal; the intermediate time was spent in Arkansas.

All those cars, on the movement from Texarkana through Van Buren, a distance of 298 miles, the schedule time for which move-

ment, linking up the through freight schedules, without any terminal delay, is 28 hours.

Q. Where did you get that?

A. From the company's official time cards for the ordinary freight. The company classifies its trains between Red Ball, Green Ball and ordinary, and this is the slow time.

On that movement, there were 100 cars, which consumed in total, 1,477 days, or an average of 14.7 each; some of the cars might have gone through quicker, some took a longer time; in fact, our detail shows it did; it amounts to the same thing whether one car spent 14 days or one hundred cars spent 1,400 days. The lost usage of cars is there just the same.

Q. What was the excess over the 25 hours which the cars visited in the State of Arkansas?

A. Fourteen days—about 12 days, lacking four hours.

Q. They found the climate inviting down there on their trans-state flight?

A. I don't know as to that; this is what the wheel reports show on the movement through Louisiana and McGehee and Van Buren, a distance of 256 miles, the schedule time for which, on the same basis as I mentioned, was 26 hours; a movement of 28 hours consumed in total 340 days, an average of 12 days per car.

Q. You don't catch the point I want; one would be delayed two days, and one 20 days, something of that kind, just give us a few instances of the two extremes, the longest and shortest, and then give us the average, I don't want too much of the detail, but I want some of it.

A. One car got through in three days, and seven cars got through in four days.

MR. MOORE.

Q. Can you give us the number of the cars as you go along, so they can be identified?

A. That detail is available; I can not give it right now; I can get the car number, if you desire, the time, date and the hour in and out of the State and the train numbers: I have it but I haven't it with me.

I found one car consuming three days, seven cars four days, three cars taking nine days; four cars taking 25 days, one car 43 days.

Q. Just give us a few illustrations, I just want to see how they were running?

A. That is the movement between McGehee and Van Buren, which were the first and last terminals; the movement from Memphis and beyond, going out of the State through Cotter on the White River Division, a distance of 240 miles, the schedule time for an ordinary freight train, the entire distance, is 23 hours.

I find 134 cars consumed 772 days, an average of five days per car.

Q. Against what is the schedule?

A. A little less than one day, 23 hours; we have one car that got through in one day, 28 cars that got through in three days, 12 cars in 9 days, six cars that took 14 days, one car that took 22; there were other cars.

Q. That is the division—we had some testimony that those grain trains went through like greased streaks of lightning.

A. Yes, sir. I might say in that connection, in locating the billing for the White River Division, that is the division we speak of, for October, 1907, and on some of their local trains in the State, we found a great deal of that wheat moving on local trains—I say a good deal, I haven't the number of cars, but it is obtainable from our memoranda.

Q. When that export wheat came through on local trains, it didn't go through like a greased streak?

A. No, sir; it couldn't when it got on that local run.

Moving from Texas, through Texarkana, and up the main line through Hoxie into Missouri, a distance of 264 miles, I am giving the distances between the first and last terminals in the State, and not from State line to State line.

Q. Some of those cars might have gotten lost after leaving the terminal?

A. Yes, sir, but these are pretty close to the State line, and I suppose they got across.

Two hundred and sixty-four miles, Texarkana to Hoxie, schedule time for ordinary freight trains, 27 hours, movement of 166 cars, consumed 932 days, five days per car, and between Texarkana and Hoxie are but two through freight divisions, through freight trains should run, Texarkana to Little Rock, and Little Rock to Hoxie. That would indicate to my mind that the schedule time of 27 hours for two through freight divisions, where five days were consumed by this number of cars, that they must have been in a yard some place, or a passing track.

Q. They would hardly be on the main track during those five days?

A. Not if they ran any other trains.

Q. I understand the main track was about all this transstate freight needed?

A. The figures speak for themselves.

The movement from McGehee, by Little Rock, and through Hoxie into Missouri, a distance of 221 miles between McGehee and Hoxie, schedule time for ordinary freights, 35 hours; 98 cars consumed 635 days, an average of 6 days per car. McGehee to Little Rock is one through freight division, and Little Rock to Hoxie is another; the same remarks would apply there as on the Texarkana-Hoxie movement.

Q. Add a few of the shortest and longest movements as you go along?

A. From Texarkana to Hoxie, where the average was 5 days per car for 166 cars, I found one that made it on the schedule, got through in time.

Q. That was one of Mr. McCutcheon's onions?

A. I don't know the contents of the car now; I found 46 cars that got through in 2 days, 20 cars in 4 days, and 43 in 3 days, 14 that took 5 days, 3 that took 23, 2 that took 25, and 1 in 66 days—that car must have been in bad order.

On the movement from McGehee to Hoxie, 98 cars an average of 6 days apiece, I find 10 cars made that run in 2 days, 27 in 3 days, 18 in 4 days, 2 of them in 14 days, and the maximum is one car which consumed 56 days, and the one immediately preceding that, being 1 car in 34 days. The movement from Memphis to Van Buren, a distance of 305 miles, via Bald Knob and Argenta, schedule time 31 hours, 25 cars 195 days, average of 7 days per car; I find that out of those cars, that 5 took 4 days; that is the minimum, 4 took 5 days, 5 took 6 days in transit; the maximum was 1 car 16 days; ranging from 4 to 16 days or an average of 7 days.

I might say, in stating those averages, that we dropped the fractions; that really figures 7.8 to split hairs on the proportion; it might really be called eight.

Moving in the opposite direction, from north of the Missouri-Arkansas line, via the White River Division, via Bald Knob and Wynne and McGehee out into Louisiana, and beyond, a distance of 281 miles from Cotter to McGehee, the schedule time for ordinary freights is 39 hours; I find 138 cars consuming 930 days, or an average of 6 days per car.

Q. That is the greased streak of lightning road I believe?

A. That was the way export grain you refer to was handled, that is if it was off the White River Division.

Q. I think there was some testimony that that was the route it used.

A. I find the minimum was 4 days, 8 cars consuming that much time; 32 cars, 5 days; 38 cars, 6 days; 31 cars, 7 days; 9 cars, 9 days; 1 car took 23 days, moving southbound between Van Buren and McGehee, originating beyond Van Buren in Oklahoma or beyond and destined to Louisiana, a distance of 256 miles, schedule time 22 hours, I find 291 cars consumed 2004 days, an average of 6 days per car.

Q. That is on October?

A. Yes, sir, still on October; the minimum on that movement was two days, between Van Buren and McGehee, 2 cars consuming that much time; 28 cars 3 days, 73 cars 4, 41 cars 5 days, 45 cars, 6 days, going up, 21 cars 9 days, 13 cars 11 days, runs on up to 12, 14 days, up to the maximum of 32 days consumed by one car.

The movement from Hoxie to Texarkana, originating in Missouri, destined to Texas a distance of 264 miles straight main line over two through freight divisions, schedule time in that direction 24 hours; 216 cars consumed 670 days, or an average of three days per car, or exactly three times the schedule time—24 hours. In that movement, is included 14 cars that got through on schedule time, 86 cars took twice the schedule time, 76 that took three times, and 22 cars that took four times, speaking in round numbers; the maximum was one car consuming 19 days; that car was perhaps in bad order.

From Missouri and beyond, via White River Division to Memphis and points beyond, that should come from Cotter to Newport, on the White River Division down the main line to Bald Knob, across to Memphis, a distance of 240 miles, schedule time 24 hours; 258 cars consumed 823 days, an average of three days per car; in that movement, we find 55 cars that got through on schedule time, out of 258; 76 cars took twice the schedule time, 45 cars took three times the schedule time, 37 cars took four times, and the maximum time consumed was 15 days by one car; that is the October movement.

Q. Have you a summary of the October movement there?

A. Yes, sir, totaling it all, 1,454 cars, averaging 6.03 days, in round figures six days; the schedule time averaging it all, would have been 1.1 days per car; it consumed almost five days in excess of the schedule on the average."

In tracing these car movements, the accountants took the transstate billing for the territories named and took every transstate car. There was no selection of cars, but all for the first half of October, 1907. Then they took the first half of March, 1907, a spring month, to compare with a fall month, and in similar manner traced all the transstate cars; omitting the detail, which is similar to that of October, the result was: Total schedule time for the movement of the 1,560 cars traced, average a little over one day per car, the actual time taken a small fraction over four days per car. (R. pp. 1437, 1438.)

As to the transstate cars going through divisions unbroken, the records were again examined to find the truth of it.

"Q. There has been a good deal said in this record, about the division handling of cars; there seems to be quite a marked theoretical difference between the handling of transstate, interstate and intra-state; have you investigated the question of handling of cars at terminals?

A. Yes, sir.

Q. Have you got any data worked out as against these theories, about the handling of them there?

A. We have made an investigation; I have the result of it here.

Q. State generally the methods that you have pursued, and what you have there, and then we will take it up somewhat in detail.

A. I have a set of figures here, representing the conditions of affairs that we found at all the through freight division terminals in

Arkansas for five days in the month of October, 1907; the first five days—we stopped at the fifth day because it was an immense task; the cars were standing around the terminals so long it was a super-human task to find some of them going out, and we didn't attempt to get more than the five days; I say all the terminals; I discovered this morning that the Little Rock figures had not been recapitulated, although they had been compiled; that is being done now, and I will have to omit that for the present, and will get it for you a little later." (R. p. 1439.)

Then he gives each of the division terminals in the State, and what lines they served.

"Q. Give us the result of your investigation; take them up by division points?

A. We got at our figures in this way, taking Hoxie as an example; I can explain it by reference to a particular terminal better than I can by an abstract example.

We took all the trains shown on the dispatchers' sheets, as through trains, moving into Hoxie from the North; we listed each train, showing all the car numbers, the hour and date of their arrival at Hoxie, and as a little further guide, what the conductor said was the final destination of the car, in some cases the contents; having listed all the train as it came into the terminal, by car number and initial, we proceeded to trace those cars leaving the terminal, our plan being to find them going out in another train; that information being derived from the wheel report of the train that took them out of that terminal, and of course, when the cars were not in the care of the train crew going into the terminal or going out of the yard, they were charged up as being in the yard.

Q. May be they were out on the main line if they were transstate; did you find whether passenger traffic had been interrupted by storing them on the main line?

A. Of course, that wouldn't be good railroading to leave the main line blocked.

Q. So you have assumed that they didn't leave that transstate freight on the main line?

A. No, sir; there is no question but what they were put away; stored somewhere.

Q. Then what did you do?

A. Deducting the hour and date of arrival in the terminal, from the hour and date of departure of the cars, the lapse of time was the time the same was in the terminal, or the time in which the car remained in that terminal.

Q. From that dispatcher's sheet, you got the time it went into the terminal and the time it went out?

A. From the dispatchers' sheets we located all the through trains that went into the terminals, and then we took the conductors' wheel reports of those trains and the car numbers, and the hour and date

of arrival of the train, and the hour and date of departure in other trains.

Q. From what the dispatchers' sheets or what the wheel reports showed?

A. From the wheel reports; we used the dispatchers' sheets as an index to what through trains came in that terminal, so we might know whether we got them all.

Q. Go ahead and explain what you have found?

A. Taking the Hoxie terminal—these figures cover all trains for the first five days of October, 1907, into Hoxie from the North, during that period, there were 23 through trains, hauling a total of 842 cars, 830 loads and 12 empties; the caboose is excluded from all these figures; it is a service car and is necessarily taken off at the division terminal.

Of those 842 cars, there remained in the Hoxie yard quite a long time—I will state the average first; I found that those 842 cars, the cars in that individual train went south from Hoxie in from two to seven other trains, and remained in the Hoxie yard from one hour and twenty minutes to two hundred and twenty-five hours and fifteen minutes.

Q. That is a nice place up there at Hoxie.

A. We found seven cars that stayed there 121 hours and 20 minutes; seven cars that stayed there 6 hours and 5 minutes; 2 cars, 52 hours; 2, 45 hours; four cars, 36 hours; 10, 34 hours; 35, 19 hours; 14, 22 hours.

Q. Was there any discrimination between the visitation at Hoxie, of transstate, interstate and intrastate cars?

A. The only information we have on that is what the conductor said was the destination of the freight, and that is not very good, because we found they were not reliable on that; we didn't go to the waybills.

Q. You just took the wheel reports?

A. Yes, sir; he might have said it was going to Texarkana, and it would stop at Little Rock.

Q. You used whatever might be indicated on the wheel reports for whatever probative force it was worth; is it indiscriminate between the classes of traffic?

A. In the case of these trains coming from Hoxie from the north, through Missouri Division trains running all the way from Piedmont, most of them, as we understand, are through trains; they may make some pick-ups and set-outs, but with the exception of that, all of it was interstate; I wouldn't say all of it was, but the major portion of it was.

Q. It would be necessarily all interstate except what might be picked up between the State line and Hoxie?

A. Yes, sir; some sixty miles of road.

Q. I believe you stated you haven't the Little Rock figures here?

A. Yes, sir.

That was stuff from the north into Hoxie which we traced out southbound; of the trains from the south into Hoxie, we found 13 trains, carrying 572 loads and 78 empties, total 650. Those cars went out in from three to seven other trains, remaining in the yard a period varying from 1 hour and 20 minutes to 103 hours and 40 minutes; we found 14 cars that stayed there 1 hour and 20 minutes, and 40 cars, 12 hours; 27 cars, 16½ hours; 34, 11 hours, and there are some cars that stayed there but two hours—19 of them.

Q. Did you get the averages of that?

A. They went out in form two to seven other trains; I have no average here in days; they can be figured from this data.

Q. Going out on the different trains was what I was asking you about; it was from two to seven?

A. Yes, sir; that is, they consist of any one train, went out in not less than two trains and some went out in seven trains; I mean the cars carried by the train.

Q. You mean that of the cars coming into Hoxie on those known trains, instead of going through on a bridge, they would go out on from two to seven trains?

A. Yes, sir; one train going into the terminal, the cars in that train going out in perhaps two trains, perhaps seven, that is the widest range, none less than two and none more than seven.

Q. You didn't find the unbroken train there?

A. Not at that terminal. (R. p. 1439-1441.)

Omitting the detail of the other divisions, this has been given in full to show the reliability of the methods employed to ascertain the data.

On the White River Division, one train got through without a break, the cars in the other trains went out in from two to three other trains; in the reverse direction, no train went through, and cars in each went out in from three to six other trains.

At Newport, one train of twelve cars got through, others went out in from one to four other trains.

At Van Buren, they went out in from two to nine other trains; on the reverse movement, three trains got through and the others went out in from two to eight other trains.

The other divisions are followed through, and will not be further detailed. In the whole movement of a good many thousand cars, four trains went through a division unbroken. The hours and minutes of the stay in each division yard, origin, and number of trains the cars went out in are given.

The Little Rock Division, the largest in the State, is fairly typical of all: Coming south, there were 822 cars in 18 trains and went out in various directions in from three to eleven other trains, and none of them went through unbroken. The time spent in the yards varied from 3 hours and 40 minutes to 189 hours. On the reverse move-

ment for the same period, there were 15 trains containing 444 cars. They went out in from two to seven trains, no train went through unbroken. Time in the yard varied from 2 hours and 30 minutes to 104 hours and 55 minutes, one car only consumed minimum. (R. p. 1441-1451.)

The State also proved from the records that physical reasons prevented the "bridge theory" of transstate freight being true:

"Q. Mr. Ludlam, there has been a great deal said in this case, about the transstate business and the cheapness of transportation of freight on transstate trains:

I want to read you a statement of Mr. McPherson (vol. 1, page 326) :

"The railway company establishes by accurate test, the hauling capacity of each locomotive, over a particular district or division to which it is assigned, and this establishes a measure that we designate as the 'potential capacity' of the locomotive, and the number of tons the locomotive draws from day to day is recorded, to determine whether the operating officers in charge of the various divisions or districts, are securing the full measure of the efficiency of the power."

In handling transstate freight through Arkansas, say into Louisiana, it would have about these routes to follow:

The main line from St. Louis to Tearkana, what you might call the eastern Illinois line down the east side of the river, over this Paragould leased track that has been referred to, of the Cotton Belt; or, from the Northwest over the White River branch down to the connection of the main line at Diaz, close to Newport—just north of Newport; and west over the Little Rock & Fort Smith line; starting in at the State line at Van Buren and then going from Little Rock towards Louisiana, it would go to Alexandria, passing through Pine Bluff; then from Memphis, coming in from the east via Bald Knob and then south to Little Rock. Then, of course, the reverse movement, taking in those routes from the north, east or west, as the case may be.

Now, if you have any data to show the potential capacity of the locomotives on those routes I wish you would put it in evidence.

A. We have prepared an exhibit showing the tonnage capacity of engines on the St. Louis, Iron Mountain & Southern Railway Company in freight service, as shown by official timecards, issued for the government of employees only, effective during the last half of 1907, compared on the various operating districts over which so-called "transstate" trains would pass through the State of Arkansas. As various classes of engines with varying tonnage ratings are in service on the different districts, the maximum rating on each district has been used below as the basis of comparison. (See exhibit "W," R. p. 2563.)

* * * * *

Q. What would be the direct effect of this upon these so-called "transstate" trains moving through the State like they are on a bridge, Mr. Ludlam?

A. It shows that such a train would be an impossibility.

Q. Suppose there was a train of transstate freight made up at St. Louis, going south; that would have one of two routes to take: One on the main line via Poplar Bluff and those hills north of that—I have forgotten the name—and the other using this leased line that they lease from the Cotton Belt track:

What would be the effect of the operation of a train of that kind?

A. The official time table, number 16, of the St. Louis, Iron Mountain & Southern, taking effect July 4, 1909, shows that any one of the engines, from number 1 to number 100, could haul 1,900 tons from St. Louis to De Soto, but that any one of those same engines could only haul 900 tons from De Soto to Piedmont. That is, the train would have to be more than divided in two when it got to De Soto.

When it got to Piedmont it could haul from Piedmont to Hoxie 2,300 tons. In order to run through from St. Louis to Hoxie the train would have to have 1,000 tons less than the capacity of the engine between St. Louis and De Soto, and it would have to have 1,400 tons less than the capacity of the engine between Piedmont and Hoxie. That is, the engine would be working about one-half its capacity a large part of the distance—one-half or less than one-half of its capacity.

Q. Of course that would necessarily mean the breaking up of the train?

A. Yes, sir.

Q. Now, supposing instead of taking that route they took this other low grade route; I don't care about going into rating on that, but just call attention to this, that it is a low grade line:

That would be more economical to operate, I presume, than this other?

A. If it is a low grade line it undoubtedly would be.

Q. And this transstate matter either must take the expensive operation on the main line, or else go to the expense of hiring another track on another railroad, to take care of it?

A. In order to operate more economically—in order to handle it cheaper; yes, sir.

Q. Where does the benefit to the State of Arkansas come in on that sort of economical management of these transstate trains through Missouri and over these leased lines, or out here in Missouri and eastern Arkansas?

A. Arkansas would not be interested in the economical operation of transstate freight."

Mr. Bee also explains the practical workings of this rating of the locomotives (he has had experience in the motive power department, and is familiar with it) :

"Q. This morning Mr. Moore was asking you some questions about the carrying capacity of trains, and gave you an illustration of the rating of locomotives; I hand you a list showing the capacity of different classes of engines, used there on the Arkansas Division, and here is the capacity of different classes on the White River Division. I wish you would look over those, I don't suppose you have had an opportunity to see them.

A. These seems to vary from 350 tons to 2,400 tons per engine on different divisions and different engines.

Q. Take a movement through from Hoxie to Texarkana, one of those bridge movements, where the cars go through on a bridge, show the ratings of the engines here, and what effect that would have on your train?

A. These districts read straight down, do they? Hoxie is first, Little Rock second, and Pine Bluff third?

Q. Pine Bluff would be on a branch; Hoxie, Little Rock and then Texarkana would be on the main line?

A. Hoxie, Argenta, and Argenta to Texarkana, that would be the main line would it?

Q. Yes, Argenta is the yards across the river from Little Rock.

A. If a Red Ball train came out of Hoxie or otherwise, if it has its full tonnage, it would have to set part of those cars out when it got to Argenta.

Q. Why?

A. Because it carries 1,500 tons up to Argenta, and from there south, it could only carry 1,200. so it would have to set out 300 tons, and if you figure the average cars at $33 \frac{1}{3}$ tons—that is a little light, but it will make the figures even—to handle three cars would be 100 tons; that would mean setting out six cars off the train.

Q. Take the White River right before you; you see one represents the haul north and the other south?

A. Take a train starting out of Carthage, Mo., moving to Crane, any engine between 851 and 893 would carry 975 tons to Crane; between Crane and Cotter, it would reduce its tonnage 375 tons, and then from Cotter to Batesville, it would reduce its tonnage 800 tons. From Batesville, if it was going back in the back direction from Batesville to Cotter, it would carry 1,200 tons, but going on south, the shipment has been raised from Cotter to Batesville to 800 tons; then from Batesville to Newport, the train would have to reduce 700 tons.

Q. Then from Newport to Argenta, is that shown on that, or would that be on the other sheet?

A. Yes, sir.

Q. There wouldn't be very much bridge movement on trans-state freight with that kind of capacity of the engine?

A. Not unless they started with an under-tonnage train; a very light train; an engine would be losing the value of its capacity if it was making a bridge movement.

Q. I am just using the expression of Mr. Doddridge which was emphasized by Mr. McPherson?

A. I simply meant, going through that picking up or setting out, it would lose its character." (R. pp. 1294, 1295.)

Mr. Bee explains in detail how the transstate traffic use more facilities than other traffic.

The fast freight necessitates other freight being sidetracked and giving way to it; breaking up trains in division points to put the fast cars together for a fast train. If a transtate train was run through the division would have to be cleared for its use; the transstate train is inspected as other trains and everything delayed in the yard while it is standing there; a bad order car is cut out with usual use of facilities attaching to it. Cotton in Oklahoma is taken to Arkansas for compression, and uses the terminals at Fort Smith; and at all other junction points use the terminals; all freight has to be scaled at the first scale, transstate freight from near the border use the facilities in Arkansas; the large lumber movement from Louisiana north would use the scales at the McGehee yards in Arkansas; the same is true of the Louisiana cotton. If it were not for the transstate traffic, Arkansas would not have to maintain the large terminals it has, and their heavy expenses would be materially reduced if not for the transstate service. (R. p. 1200-1203.)

Some other witness, probably Mr. Hamilton, explained the number of cattle pens and chutes in the State, and the cotton platforms were explained, probably by Mr. Bee or Mr. Bragg; all of these facilities are for interstate traffic.

Coming to the practical operation of transstate trains, the best explanations is given by a man who was for years a switchman in the Argenta yards at Little Rock, the largest yards in the State:

His name is Thos. McCutcheon. His testimony begins at page 930. These excerpts on from pages 931 and 932:

"Q. I wish you would explain what is done with a through freight train coming in from St. Louis, say, and what would it largely be composed of; how would you handle it, explain it in your own way?

A. It is broken up, just as I told you; I never saw a through train that came in that didn't have to be broken up.

Q. What do you mean by being broken up?

A. There were different cars that didn't go through with that same train, cars for different points in it; I never did see a through train for the South from the North go straight through.

Q. Some of these gentlemen high up in the operating department of the roads have compared their through trains to a bridge running through the State. Is there anything like that?

A. No, sir.

- Q. You did not discover the bridge?
- A. No, sir.
- Q. What difference is there between the bridge and the actual facts?
- A. Now, I have seen a fruit train come, that there would not be anything done to it, but to change the caboose.
- Q. That would be from the South?
- A. Yes, sir.
- Q. Have you seen many of those?
- A. No, sir.
- Q. Have you seen anything else but a fruit train now and then?
- A. A vegetable train, onion train.
- Q. Some onion train from Southern Texas?
- A. Yes, sir.
- Q. You have found a few of those?
- A. Yes, sir.
- Q. They are the only bridges you discovered?
- A. That is all.
- Q. The bridge only worked occasionally in going from Texas through to the North; the bridge didn't work from the North when it came down South?
- A. No, sir.
- Q. What do you do with the cars in the train as they come in, you speak of breaking them up; that is a technical term that you understand, but we don't; just explain that operation?
- A. There is different tracks designated for different cars for different points; all cars that would go to the Valley, there is a track they go on; also, we set North and South cars for different tracks.
- Q. And with the exception of these few onion and fruit trains, that come in here, every train you handled was broken up in that way?
- A. Yes, sir.
- Q. And new trains made out of those trains that had been broken up in that way?
- A. Yes, sir.
- Q. Was there any difference in handling the carloads that would come in, say from St. Louis, than there would be handling carloads that were delivered to the railroad here, say from the brick plant or cotton seed plant, or any other industry in Little Rock, after it was delivered to the railroad, would there be any difference in the handling of that than there would be in this train from St. Louis?
- A. No, sir; they would be all handled in the same way.
- Q. Of course, before it was delivered to the road, a car would be set out to the industry's switch, and loaded there, and then delivered to the road?
- A. Yes, sir.

Q. The same would be true in St. Louis, or wherever the car originated, that same service would be performed elsewhere?

A. Yes, sir.

Q. After it is delivered to the road, the handling of the car originating locally would be the same as a car originating in St. Louis or Chicago?

A. Yes, sir.

Q. Suppose a car came down from the Fort Smith branch, or came up from Pine Bluff; how could it be handled?

A. The same way as the other; if it came from Fort Smith, it is switched in the Fort Smith yard, and it is set out on the track; if it was going north, it would be set on the north track, where they kept the north cars, and if south, it would be on the south track, and then another engine comes up and gets it and switches it out again, down below the south end?

Q. To the main line track?

A. Yes, sir.

Q. As I understand you, all the trains, the freight cars are brought into Little Rock, they are broken up, and new trains made out, and they are sent out to their destination in that way?

A. Yes, sir."

He was cross examined at length, but the more he went into the subject the more fully he proved the statements above made.

The plaintiffs made Mr. Lincoln a witness on movements of trains and on this point he testified at the instance of the plaintiffs:

"A. I don't think there is a great deal of difference between that in the handling of interstate or transstate carload business, because it is simply a switching service. Now, that expense is smaller at some division points than at other division points. Take a division point like Little Rock: Trains have to be broken up more there than at Poplar Bluff, or Hoxie—I think that is the division point now. There is more breaking of trains at Kansas City than at Sedalia.

Q. What would be done at Hoxie, for instance, I mean in the transstate?

A. With a through train going to Hoxie?

Q. Yes, going to Texas?

A. Well, a through train starting from St. Louis to Texas pulls out of here as a solid train, we will say, to Hoxie. There the crew taking it releases that train. There is a new engine and a new crew to take it out. That train is broken up to some extent at Hoxie in order to take care of the through freight which may accumulate, and go in that train and set out some that is not time freight.

Q. Please explain that.

A. There are three classes of freight in the train, red ball, green ball, and the third class on which the time does not cut a figure. When they break up at Hoxie, they will put in red ball there and take out some unclassified freight.

I stated that at a point like Hoxie the service of breaking up the train and switching will not be as great as a point like Little Rock. There they will probably have to break the train up very largely because the contents of that train out of St. Louis to Little Rock is distributed over other divisions. It is not all going to Texas, but some may go to Fort Smith or Monroe or Shreveport, or Pine Bluff; so it requires the breaking up of that train and the making up of a new train at Little Rock.

Q. Let me see if I understand you: At Hoxie there was a car that was not to go on: With that the work would be to set that car off?

A. I would say that if you start the train out of St. Louis to Hoxie, and Hoxie will have cars coming in there from Cairo and from Thebes. Trains break at Hoxie.

Now, if there was some red ball freight, the time freight, in the trains out of Thebes and Cairo, it would be put in the train going south from Hoxie.

Q. Assume that that is transstate tonnage.

A. Yes, transstate, all of that is, or interstate tonnage, not necessarily transstate—Poplar Bluff or Texarkana or El Dorado.

Now they take out of that train the slow freight and put in the red ball so as to have that train take care of the red ball south of Hoxie. There would not be very much changing of the contents of that train at Hoxie, but there would be at Little Rock and there would be at Kansas City.

Q. If there were five cars on that train going to Texas, when it reached Hoxie—I mean in its original condition as it left St. Louis—there are two cars that come in from Cairo which you want to put into that train to take to Texas, you simply hook those two cars on to the through train to Texas?

A. That is hardly the situation. I will try and explain a little better than I have.

We will assume—I don't know what the tonnage is of the engine that takes that train out of St. Louis to Hoxie—that is one division, there is a division in between—that the engine is rated to carry 1,500 tons:

It has in the train 700 tons of red ball. It has in the train five hundred tons of green ball, that is 1,200 tons.

Q. What is green ball?

A. That is next to the preferred freight. Green ball comes next to red ball.

Then it has in the train 300 tons unclassified freight on which time is not an object. Now, it arrives at Hoxie. These trains that came in from Cairo and Thebes have red ball freight in them. They will take out at Hoxie—by the way, Hoxie is on the main line, no branches there—in the train that carries 1,500 tons there at Hoxie, they take out at Hoxie green ball freight—or they first take out the

nonclassified, the slow freight, and if necessary, take out of it some of the green ball freight and put in the red ball, the time freight, to expedite the movement of that freight through.

Q. They take out the unclassified freight?

A. Yes, first.

Q. And put in the higher grade for the purpose of giving the latter the benefit of the quicker movement?

A. That is predicated on the power in and out being the same.

Q. I understand. What do they do with the train when they have hooked on that additional green ball?

A. When they make up their tonnage for the train south of Hoxie that has to go on and what is left—

Q. The train goes right along?

A. Another train.

Q. What do they do with the unclassified traffic that is on there?

A. Leave it there to fill out the next train or carry it forward on a local train; or they may accumulate sufficient freight by reason of three divisions to take care of that and run an extra train; or, they may be able to handle on the train south of Hoxie if there are a greater number of tons to the engine than into Hoxie.

Q. That is yard service?

A. Switching and yard.

Q. For the purpose of expediting the more important freight with reference to the movement?

A. Yes, sir.

Q. And it consists in taking out of a train certain freight and putting in certain freight which can not be delayed?

A. It requires a switching service, yes.

Q. Now, we will go to Little Rock: What do they do at Little Rock, tell me in detail.

A. The train going into there would be broken. It would be broken to a greater extent than at Hoxie because of the various branches—suppose there is a carload each going to Camden, Hope, Texarkana, Fort Smith or Galveston, or maybe to Pine Bluff: Now, there are three lines branching out there. If the red ball freight going in different directions, that requires another breaking up of that train." (R. pp. 986-990.)

On re-direct examination, he further explained the handling of transstate freight:

"Q. Mr. Moore referred to through trains that would have ten cars of transstate, and probably ten other cars would be set out at Little Rock, and asked you, if I understood him correctly, whether this switching or breaking up of a train was not necessary so far as regards the ten cars that were going on through. I will ask you if this switching was not done, and other cars hitched onto those ten cars, if that would not make the transstate freight a very expensive proposition?

A. I think I catch the idea is this; if the ten cars of transstate traffic were allowed to go on through as a continuous movement, without putting other cars into that train to bring it up to its tonnage that the engine can haul and the crew can handle, that it increases the expense of handling the transstate freight—undoubtedly.

Q. Well, that would be true if it started from St. Louis that way?

A. Anywhere.

Q. It is economy of the transstate business, as well as general economy, if you break up these trains at these division points or distributing points, as you have indicated has been done?

A. It is economy to all of the traffic handled to make each engine haul full tonnage and not having light trains, whether it is one class of freight or another.

Q. Then it is good economy to set out these through trains at Hoxie or Little Rock, whatever the point, and wait for a train to be made up to carry them?

A. It is economy to wait at a division point and fill out your trains.

Q. In reference to various services performed at the division points, you generally have an inspection? Isn't that a service performed at these division points?

A. Inspection of what?

Q. Inspection of the cars?

A. I assume the cars are inspected at the division points. I hadn't thought of that.

Q. The wheels, boxings, and everything of that kind?

A. That is what is usually done at division points, is to attend to equipment.

Q. That is a cost of service, of course, that would apply—

A. To all.

Q. Apply to all alike?

A. Yes, sir." (R. p. 996.)

More testimony is adduced on both sides as to the switching services at division yards in connection with the State's plan of dividing these expenses, but it is largely detail. The general service is fully explained by Mr. McCutcheon and Mr. Lincoln, each thoroughly familiar with it; one introduced by the State and the other, on this subject, by the railroads.

Mr. Willmering had some positive opinions on the bridge theory, and thus expressed them:

"I found from actual experience, and I can testify from my own knowledge, that the interstate, both carload and less than carload, is actually handled at division terminals, and this theory that has been advanced in this case and applied by Mr. Doddridge—this bridge theory—that this transstate business going over a State as though it were on a bridge, does not in reality exist.

"There are too many cripples sidetracked or ditched in these supposed solid through trains, and I have not given that any consideration at all, because it don't exist. I know from my own knowledge that cars of lumber handled from points in Louisiana and points on the Iron Mountain in Louisiana—I recall some moving to points in Oklahoma, that have been delayed in transit from 60 to 90 days, and have been weighed four or five times in transit; the waybill itself showed that this bridge theory is an absurdity. It is nonsense and it don't exist in reality. It occurs to me Mr. Doddridge and McPherson tried to apply the ideal theories in railroading for the most economic management possible, but they have not accomplished their ideals and never will, I don't think.

"So for that reason and owing to the fact that these interstate cars both less than carload and carload are handled at the division terminals if the length of haul is greater than 100 miles—that also double the tons handled in order to ascertain the ratio." (R. p. 1151.)

The conclusion from this testimony is irresistible that the "bridge theory" of transporting transstate freight is nonsense. Freight moves from division point to division point and at each division point, each car goes into other trains with rare exceptions, like the onion train from Texas; one train may go through one division, but the engine ratings forbid any train loaded to its engine capacity (and all through trains should be), going from one division to another without breaking into several parts. The usual rule is for the train to go into the division yards and other trains made up, and the cars coming in in one train will go out in from two to eleven other trains. It is sheer nonsense to say that the transstate cars do not use the facilities like other cars, and do not incur the same expense in the yards car for car. The records show that of 1,500 transstate cars passing through the State in October, each staid on an average five days over schedule time, and in March, 1,500 cars stand four days over their respective schedule time. During that interval they are using every facility of the road, division yards, passing tracks, switch tracks as well as main line; they are handled by switchmen, inspectors, weighmen, trainmasters, train dispatchers, and every other class of employees. They are, while spending their time, necessarily switched and shunted around much more than a car which is switched to an industry track and returned loaded.

The basic principle of the plaintiffs' case that the cheap freight is the transstate freight, cheap because carried through the State "as if on a bridge," is proved to be a mere theory, not a condition..

AS TO EXTRA INTRASTATE PASSENGER TRAFFIC.

The situation of extra expense of intrastate passenger traffic has been brought into the preceding discussion, but there are some phases of it which call for separate consideration.

The character of the passenger trains on the Iron Mountain were definitely fixed by Mr. McPherson, Assistant to the General Manager of that road, who filed exhibit 46 (R. p. 2412), in which he lists the through trains and their runs and stops, and the local trains, their runs and stops. The situation was discussed fully with Mr. Ward, one of plaintiffs' witnesses in rebuttal, where the exhibit was analyzed and some additional facts brought out; (R. p. 1884-1888 and 1891.) also at page 2066-2068. There were eight through trains, one a fast mail, carrying one sleeper and no other coaches. There were 48 local trains running daily, including Sunday. Two of these made the same runs that were made by six of the through trains. Thirteen of the local trains carried sleepers, one of them three sleepers, and all of the through carried sleepers. It was testified by Mr. Maurice Wright, and later sustained by some statistics of a test that it is undisputed that of the passengers riding in Pullmans, 18 per cent were intrastate and 82 per cent interstate. (R. p. 2287, 2288.) It is undisputed that all the trains on the St. Louis Southwestern Railway are local. It carried no through trains. (R. p. 2285.) Mr. Wright, called in rebuttal, testified as to handling transstate and interstate passengers at Little Rock: Transstate passengers from Texas to Memphis would change cars at Little Rock, on one train making close connection, on the other waiting one hour and 20 minutes. Coming from Memphis to Texas points, they would change at Little Rock on one train and go through on the other, on the fast train they would have to change. Passengers from Louisiana going to St. Louis or any other transstate point, would have to change at Little Rock; on one train they would make close connection, on another spend one hour and 20 minutes, and on another spend a night. All passengers from the central division, the Fort Smith road, going to St. Louis or Memphis, or anywhere out of the State would change at Little Rock. Going out of the State on the White River branch, all the transstate passengers from Louisiana or Texas or Tennessee, would have to change at Little Rock, or Newport or Bald Knob; all passengers from Fort Smith territory (165 miles long through the heart of the State), going north, east or south would have to change at Little Rock to get out of the State. Interstate passengers from north, east or south of Little Rock going west on the Fort Smith road, and all transstate passengers from the north, east or south going west over Fort Smith branch would change at Little Rock. (R. p. 2265-2267.)

It has heretofore been explained that the tracks of the Iron Mountain run into Oklahoma before reaching Fort Smith, and all freight traffic on that road into and out of Fort Smith is interstate. The Iron Mountain has a contract with the 'Frisco road to use its bridge in getting into Fort Smith, and runs two passenger trains across it. Memphis has been placed by the plaintiffs as constructively in Arkan-

sas. When Mr. Nay was on the stand in rebuttal in behalf of the railroads, this situation was put to him, and his testimony follows:

"Q. While on that subject let me tell you about some of the evidence in this case:

Memphis is treated as an Arkansas point in this case. The expense is all charged up to Arkansas. Of course, all the travel is interstate and from Memphis to Texas would be called transstate.

A. From Memphis to Little Rock is interstate.

Q. Yes, and the expenses of Memphis are treated as if incurred in Arkansas.

A. That is by some arrangement between you?

Q. No, sir. I have been kicking against it and am still kicking. It is by "force of arms" that that is in here in that way. But those are the facts, there is no dispute on that point, and that the traffic from that point in interstate traffic.

The same thing is true of Fort Smith, but to a lesser extent. Two passenger trains, run over the bridge which makes it intrastate. All of the freight traffic is interstate as they do not use the bridge at all for the freight, but only for the two passenger trains.

So far as the Cotton Belt is concerned, I believe the yards in Texarkana are in Texas; isn't that true, Mr. Kimbell?

MR. KIMBELL: Yes, sir.

Q. You know the travel out of Texarkana on the Cotton Belt and out of Fort Smith and Memphis on the Iron Mountain would be a large volume of traffic.

COL. MOORE: You mean transstate?

JUDGE HILL: I am speaking of the traffic. It would be all interstate or transstate and as to all of it there would be two terminals in Arkansas, and on transstate there would be one, out of each of these points.

Would not those facts modify to some degree at least your objection to this method?

A. Yes, sir, that would modify it to a degree. But what I had in mind when I spoke of transstate—I did not have in mind particularly Fort Smith or Memphis or Texarkana, but passengers from St. Louis to Texas points.

Q. I understand that. And that is why I call your attention to the local conditions and ask you if those local conditions would not modify your position?

A. Yes, sir, but there would still be certain transstate passengers in these 145,000; say passengers from St. Louis to San Antonio or from the Southeast going into Oklahoma.

Q. Of course there would be some, but in these there would be the interstate passengers from Fort Smith and Memphis to Little Rock that would have two handlings under this method of accounting and they are only charged with one.

A. Possibly those might offset each other so the difference would be 'negligible.' " (R. p. 2063, 2064.)

One of the chief items of extra expense assigned to intrastate passengers traffic by Mr. Doddridge (R. p. 464), and other witnesses is the increased casualty risk arising from increased number of passengers boarding and alighting from cars at stations. Taking the trans-state passengers going through Arkansas, except on eighttrains, and there are as many alighting and boarding trains as the short haul State passengers, who would rarely have but two. The longer haul interstate would have as many, and in many instances more than the intrastate.

Transstate passengers using Memphis and Fort Smith would have in this case double the casualty risks charged up to them that the interstate passengers have. The rest of Mr. Doddridge's testimony is largely inapplicable to the traffic in Arkansas, is upon conditions not existing, due to the absence in this case of the intrastate carried solely on the local and the interstate on the through.

The trial Court, in his opinion, stated there was no extra cost of intrastate passenger traffic on the Southwestern, but that there was an increased cost of 10 per cent on the Iron Mountain. Where he made the difference under this evidence, we are unable to see unless it be that the Iron Mountain carried eight through trains which were largely patronized by interstate traffic. Doddridge admits that the local train is a feeder for the through, and it is not right to charge all its stops and all its expense to the traffic carried by it, for much of it is done to enable the through train to make time, deliver and take up mail and express. (R. p. 488, 489.)

Mr. Doddridge admits that the casualty risk is greater on the fast train than on the local, and that they cause more wrecks than the local. (R. p. 490.) But, he says the casualty risk he referred to in his extra cost items against the intrastate, was that of getting off and on the trains. (R. p. 490.) This other casualty risk was not enumerated; but as shown by the conditions in Arkansas, the interstate is receiving as much or more casualty risk in getting on and off the trains than the intrastate.

In the face of the conditions shown to exist in Arkansas and the inapplicability of the reasons assigned for attributing extra expense to intrastate passenger, it can hardly be seriously urged by the plaintiffs that they have made out any appreciable extra expense. The action of these plaintiffs since obtaining the injunction against the two-cent passenger fare is pretty conclusive evidence that they had no cause of complaint against it.

Mr. H. C. Halverson, chief clerk to the assistant general passenger agent of the Iron Mountain, was called as a witness by the State.

He came to Little Rock in March, 1910, and is familiar with prices of transportation sold by the Iron Mountain in that year.

The Iron Mountain is a member of the Southwestern Passenger Association, which sells a mileage credential book in Arkansas for 2,000 miles at 2 cents per mile, plus \$1.00. His road sells a mileage book of 500 miles for \$12.50, and in Kansas sells the same book for \$10.00, 2 cents a mile. The books are good anywhere in the State, and are on sale in all stations. At all competitive points in the State, they are selling tickets at $2\frac{1}{2}$ cents per mile to meet competition with Rock Island and other roads having $2\frac{1}{2}$ -cent rate. (R. p. 928.) According to the allegations of the complaint, the 2-cent passenger rate was confiscation. At that time the interstate revenue per passenger mile through Arkansas (exhibit No. 5, R. 2327, 2328) was less than 2 cents, to be exact, 1.865 (the intrastate was 1.903). Having a free hand in fixing the rate, it is raised to three cents, and then voluntarily reduced it by the sale of books to all comers and at all places for the confiscatory rate of 2 cents a mile, if they travel to 2,000 miles; at $2\frac{1}{2}$ cents if they travel 500 miles, and at competitive points a general rate of $2\frac{1}{2}$ cents prevails. The exhibits worked out by the State's accountants on their plan of separating expenses, on the passenger side between mail, express and passengers, and then between intrastate and interstate passengers on the passenger mile basis after charging the intrastate with two terminals to one interstate, shows the intrastate is making larger return upon the property invested than the interstate.

Having so completely failed on proving extra cost and the State revenue even under the despised 2-cent act being higher than the interstate, naturally the net earnings on intrastate should show better, as they do, over the interstate.

This concludes the plaintiffs' case on extra cost, and the evidence against it, except the chief evidence of the State on the extra cost proposition which is shown in the result of the State's plan of dividing the expenses. It is impossible to present that evidence disconnected from the bases of division, but briefly stated, it may be said:

The State accepted every item of extra expense claimed—terminals, local trains and their attendant extra expense, and allocated it on bases supported by a preponderance of the testimony as sound and approximately accurate, and under such division, the intrastate traffic was shown to be earning a compensatory return.

Before reaching that subject, however, there are other subjects to be discussed which further weaken, if not destroy, the plaintiffs' case.

Before passing from this review of the evidence on the extra cost, attention is again called to the rule that the invalidating facts must be clearly and decisively proved, and when that touchstone is applied to the evidence in this record of extra cost of intrastate traffic in Arkansas, we are entitled to the Scotch verdict.

TRAIN-MILE DIVISION OF MAINTENANCE-OF-WAY BETWEEN PASSENGER AND FREIGHT TRAFFIC.

The plaintiffs in their exhibits use the revenue basis to apportion expenses and property between intrastate and interstate traffic and adduce much opinion evidence as to that being the best known basis.

They depart, however, from that basis in dividing the expenses of maintenance-of-way and other common expenses between the freight and passenger traffic, and it is to that subject your attention is now invited.

The adoption of the revenue basis for dividing this expense will result in showing a compensatory return on intrastate property, on the straight revenue basis as against a return that is on the border line between confiscation and compensation, towit: 4.70 per cent.

The adoption of the car-mile basis, which will be shown to be far more reliable than the train mile, will result in a return far above any cavil as to the rate being compensatory.

The railroads' exhibits contain three fundamental errors: (1) Division of property on revenue basis; (2) division of maintenance-of-way expenses between freight and passenger on train mileage basis; (3) division of expenses on revenue basis.

The State, in order to meet the great mass of testimony as to the extra cost of intrastate freight and passenger traffic over interstate, attempted to make a division of expenses on practical lines and to allocate approximately each item of extra expense, thereby to demonstrate (a) that it was unnecessary and wrong to use an arbitrary basis to divide expenses between State and interstate, and (b) to demonstrate from actual facts—as opposed to theories—that after making maximum allowances for all these items of extra expense, most of them attributed to the local train and double terminals, that the higher expense of intrastate traffic was less than the higher revenue of intrastate traffic, and therefore if the road as a whole was making a compensatory return on all its traffic in Arkansas, necessarily it was making a compensatory return on its intrastate traffic.

The fundamental error of using the revenue as a factor is elsewhere discussed and this chapter is devoted to the single error of using the train mileage as the factor to divide maintenance-of-way expenses between freight and passenger traffic.

The State in its exhibits used the divisions as made of the property on the revenue basis and the freight and passenger expenses on the train-mile basis by the railroads, for the purpose of testing out the error of using the revenue to divide expenses and left untouched the other two errors. The State never conceded the correctness of either of these bases and only took them as starting points to demonstrate the fallacy of using the revenue to divide expenses. Both of these bases work harshly against the State; how the revenue basis attributes to State traffic 13 per cent of the property devoted

to State freight while the State freight's use of the property represented in ton miles was only 7 per cent, has elsewhere been discussed.

Judge Trieber, while rejecting the revenue theory for dividing expenses (although he uses the rejected theory to divide many of the largest items of expense), accepts it as sound for the division of property between State and intrastate, and the soundness of his conclusion is elsewhere discussed, but will be accepted here to direct attention solely to the train-mile division between passenger and freight. We desire for the nonce to dismiss all of the debated questions and drive solely at the train mileage division between freight and passenger of the maintenance-of-way expenses:

Mr. Parker, engineer of the Texas Railroad Commission, a witness introduced by the State, testified that 90 per cent of the expenses of maintenance-of-way was due to the elements and natural decay and only 10 per cent from the result of use. Mr. Byers, chief engineer of maintenance-of-way of the Iron Mountain road, placed as low as 75 per cent as due to the elements and natural decay; the fact is established by competent witnesses on both sides, that a percentage varying from 10 to 25 per cent of these expenses only is attributable to the use of the way by the passage of locomotives and cars; the remainder due to natural causes.

Two of the large items of expense are maintenance-of-way and maintenance-of-equipment. In Arkansas for the six months' period in suit they were, respectively, \$1,054,676.51 and \$1,035,566.07, on the Iron Mountain, according to its exhibit No. 3. (R. p. 2293.)

Excepting minor matters, with which this discussion will not be burdened, the maintenance-of-equipment expenses are from their nature definitely located to freight and passenger, respectively, but the maintenance-of-way, from its nature, and especially in view of the much greater part of it being due to natural causes, is not susceptible of definite location between freight and passenger, and therefore some factor bearing the nearest relation to the subject must be used in order to separate maintenance-of-way expenses between freight and passenger traffic. The railroads in their exhibits used the number of train miles in each class of service as the basis to divide maintenance-of-way expenses between freight and passenger traffic. (R. p. 2316.) The mileage of passenger trains and the mileage of freight trains, irrespective of the weight, number of cars in the train and class of cars in train, is the adopted factor.

Does that factor bear such a relation to the subject that it may be safely used to apportion a million dollars of expense? Judge Trieber, after referring to the established fact that from 75 per cent to 90 per cent of the expense is due to deterioration and action of the elements, regardless of the operation of trains, says:

"In view of these facts, any attempt to apportion this item of expense on the ton, car or *train mileage* (italics ours) would be an injustice to the roads. The court is of the opinion that the

straight revenue basis will get more accurate results. The difference in intrastate and interstate rates will be taken care of by proper allowance to be made on the final calculations of the entire cost." (R. p. 2623.)

Passing for the moment the proper allowance to be made as to the excessive charge to the State on account of the higher intrastate revenue which will result in injustice to the State as pointed out by Judge Trieber, and examine which basis is more favorable to the railroads, the train mileage or the revenue, even with the revenue burdend with the excess.

Exhibit 5 (R. pp. 2327, 2328) shows intrastate freight revenue 13.41 per cent and interstate freight revenue 86.59 per cent of the total freight revenue and intrastate passenger revenue 59.54 per cent and interstate passenger revenue 40.46 per cent of the total passenger revenue. These are the factors used to apportion the expenses between these classes of traffic by the plaintiffs in their exhibits where they use the revenue basis.

Exhibit 3, par. A (R. p. 2292), shows 73.35 per cent of the revenue is from the freight traffic and 26.65 per cent from the passenger traffic. Naturally one would think from reading the evidence of the plaintiffs' witnesses that when the freight and passenger expenses of maintenance-of-way were to be apportioned that the revenue basis would be used. Had it been done, then 26.65 per cent of maintenance-of-way would have been apportioned to passengers and 73.35 per cent to freight. But the basis for this division is the number of train miles in each class of service. (R. p. 2310.)

The actual apportionment in dollars and cents is \$553,395.11 to freight and \$501,281.40 to passenger. (R. p. 2293.) That is 47.53 per cent apportioned to passenger against 26.65 per cent if the revenue basis had been used, and 52.47 per cent to freight as against 73.35 per cent if the revenue basis had been used.

If the proportion between intrastate freight and interstate freight were the same as the proportion between intrastate passenger and interstate passenger the difference in apportionment of freight and passenger expenses would make no difference, for the test is finally as to whether the combined revenue from the two classes of intrastate traffic produces a compensatory return, but where the proportions are different the final result is correspondingly different.

The difference works out as follows:

The greater apportionment to passenger traffic from use of train-mile basis instead of revenue basis is \$220,216.46. It results from apportioning to passenger traffic 47.53 per cent of this item instead of 26.65 per cent of it. As 59.54 per cent of passenger expense is, under the revenue basis, charged to intrastate as against 40.46 per cent charged to interstate, the greater the sum apportioned to passenger traffic the greater the sum apportioned to intrastate passenger; on the other hand, as the freight traffic as apportioned on the

revenue basis is 13.41 per cent to intrastate and 86.59 per cent to interstate, the less the sum apportioned to freight traffic the less will be the sum apportioned to interstate freight traffic and more to the total intrastate passenger and freight traffic. This difference of \$220,216.46 more assigned to passenger and less to freight under the train-mile basis than would be under the revenue basis, according to the above-named percentages, assigns more expenses to the intrastate passenger than its just share under the revenue basis and less expense to the interstate freight than its just share, and works out a let loss to the intrastate traffic of \$101,582.92 and a net gain to the interstate traffic of \$101,582.92 by adopting the train-mile instead of the revenue basis to divide maintenance-of-way expenses between freight and passenger, as seen by this calculation:

APPORTIONMENT OF MAINTENANCE-OF-WAY EXPENSES ON TRAIN-MILE BASIS.

	<i>Total.</i>	<i>Intrastate.</i>	<i>Interstate.</i>
Freight	(52.47%) \$ 553,395.11	(13.41%) \$ 74,210.28	(86.59%) \$479,184.83
Passenger.....	(47.53%) 501,281.40	(59.54%) 298,462.95	(40.46%) 202,818.45
Total.....	\$1,054,676.51	\$372,673.28	\$682,003.28

APPORTIONMENT OF MAINTENANCE-OF-WAY EXPENSES ON REVENUE BASIS.

	<i>Total.</i>	<i>Intrastate.</i>	<i>Interstate.</i>
Freight.....	(73.35%) \$ 773,605.22	(13.41%) \$103,740.46	(86.59%) \$669,864.76
Passenger.....	(26.65%) 281,071.29	(59.54%) 167,349.85	(40.46%) 113,721.44
Total.....	\$1,054,676.51	\$271,090.31	\$783,586.20

SUMMARY.

On train-mile basis.....	\$372,673.23
On revenue basis.....	271,090.31
Excess of train-mile basis over revenue basis	\$101,582.92

The value of property assigned to total intrastate traffic, under the revenue basis adopted by Iron Mountain, exhibit 3-A (correcting an error in exhibit 3) (R. p. 2318) is \$4,424,048.46. The net revenue, after deducting expenses, taxes and rentals, according to Iron Mountain showing on all intrastate traffic, is \$208,032.21. (R. p. 2295.) This produces return of 4.66 per cent on the property (R. p. 2296), after correcting error in property assessment, a return of 4.70 per cent on the intrastate property. (R. p. 2319.) Unless the argument on rate of return to the effect that a rate yielding as much as the rate of interest paid on the securities of this road, 4.50 per cent, is accepted as sound, this would be a confiscatory return, as being less than the legal rate in Arkansas, 6 per cent, which under some of the cases is *prima facie* the test.

If the revenue basis, instead of the train-mile, had been used to divide maintenance-of-way expenses, this \$101,582.92 would be added to the net return shown on intrastate property, making the net income \$309,614.13, instead of \$208,631.21, and a net return on the property of 7.04 per cent, instead of 4.70 per cent. If the 4.70 per cent be held confiscatory, certainly 7.04 per cent will not be held confiscatory.

It will be said that this return of 7.04 per cent is upon the straight revenue basis before the extra cost of intrastate traffic is added to bear down the intrastate return, and that is true, and also true that it is upon the straight revenue basis throughout only discarding the unfair train-mile basis where it is and substituting what Mr. Nay calls "the best known measure" (R. p. 662) for it, and without allowance for the higher intrastate revenue, 98.18 per cent on freight and 3.48 per cent on passenger. That the whole evidence establishes that the intrastate freight traffic cost less than 98.18 per cent, more than interstate freight, is thoroughly established by preponderance of the evidence; in fact, the only evidence against it is the opinion evidence of operating officials where cross examination proved that they were giving opinions on general conditions, which were shown not to exist in this case, and which several of them candidly admitted rendered their testimony inapplicable to this case.

The State's exhibits made up with the unfair train-mile division of passenger and freight maintenance-of-way expenses and an unfair revenue basis for apportionment of the property and making maximum allowances for all items of extra cost showed the intrastate freight only 86 per cent more expensive per ton per mile than interstate, as against the higher interstate revenue of 98.18 per cent per ton per mile.

The correction of this basis makes the intrastate return 7.04 per cent and extra cost is absorbed in the higher percentage. The State's exhibit allowing for all extra cost and using rational bases, but still retaining the train mile factor, which worked harshly against it as explained, shows a return of 7.69 per cent on the face of it, and after

correcting the error as to Pullman mileage, a return of 7.09 per cent. This strongly corroborates this showing and plainly indicates that more than 7 per cent is the minimum return the intrastate property is yielding. In fact, the return is much greater. All these examples are made up with concessions against the State to work out with less controversy the actual facts, contrasting them with the theories of plaintiffs.

It must be borne in mind that the correction of this erroneous basis lifts the intrastate return from 4.70 per cent to 7.04 per cent; it correspondingly decreases the interstate, but as the combined return is 7.50 per cent (R. p. 2318), neither traffic is suffering from confiscatory rates.

Really the whole Arkansas traffic is earning much more than that. Its expense is loaded with the Memphis expenses, and unfair methods of apportioning repairs of tools, fines for violating the criminal laws and other matters hereafter explained, and its revenues depleted by improvident contracts, to use an euphemistic expression, for them. But if this train-mile basis for dividing maintenance-of-way is right, it should be used, notwithstanding the burden of it to the intrastate traffic. As to whether it is right, we invite your attention to the testimony of the witnesses, particularly the plaintiffs' witnesses, and the utterances of courts which have considered it.

Mr. McPherson, in his direct examination, thus gives his views of the train-mile basis:

"The 'train-mile' measure being divided between freight and passenger service, may be followed in dividing the common expenses as between freight and passenger traffic. That is, the expenses that are common to both, but it must be discarded in any consideration of division between intrastate and interstate traffic, for various reasons, among which are, that it represents trains carrying both classes of traffic, and it also represents empty cars, the ultimate assignment of which can not be determined, and which, in themselves, yield no revenue.

"Then again, in conditions where the traffic of a railroad is not balanced in both directions, it may represent trains making no earnings whatever. That is, an engine and caboose, run from one end of the division to the other, to take a train or return a train.

"It does serve in railway operation as one of the factors in determining operating efficiency, in showing the average train haul, and tons per train mile, as all of the freight train mileage must be taken into consideration in any statistics that are prepared for comparative purposes, or for the study of railway operation.

"It is further useful in other statistics that the railway uses; in testing the efficiency of various divisions, or its operation generally." (R. p. 305.)

Mr. Dodridge, in re-direct examination, was asked in regard to the uses of the various statistics of the railroad companies on cost of traffic, and this was said:

"A. The train mile is also used.

Q. What is that used for?

A. For the apportionment of expenses, sometimes; the division of certain accounts where it is applicable.

None of these units are perfect. They are more or less of an arbitrary character and represent the conditions." (R. p. 534.)

Mr. Carl R. Gray, Senior Vice President, formerly General Manager, of the St. Louis & San Francisco Railway Company, was one of the railroads' chief witnesses in rebuttal. His testimony begins at page 1894, where an autobiography of his railroad service is found.

In direct examination Mr. Gray said:

"I believe there is in railroad practice only one more unreliable factor than a car mile, and that is a train mile." (R. p. 1897.)

On cross examination he said that it is perhaps a fair basis between passenger and freight on account of the fact that while one subjects the track to greater use it does not require the same degree of maintenance, and they come more nearly compensating, but he does not think it would be a satisfactory basis, but least obnoxious when used to divide passenger and freight than by other items.

Referring to this exact point is this:

"Q. But that would not properly represent the relation between freight and passenger when you are seeking to divide the expenses between State and interstate, as I understand your testimony?"

A. That is my view." (R. pp. 1939, 1940.)

Mr. M. L. Byers, Chief Engineer of maintenance-of-way of the Missouri Pacific and Iron Mountain systems, testified for plaintiffs in rebuttal, his testimony beginning at page 1695.

He says that maintenance-of-way expenses should be divided as general expenses are divided, but that he does not know what would be a proper factor to divide general expenses, and he says he thinks the train mile as a basis for dividing maintenance-of-way between passenger and freight "is somewhat less in error than the use of the car mile statistics would be for the same purpose." (R. p. 1706.)

He admits that many criticisms he makes of the car mile would be applicable to the train mile or revenue basis. (R. pp. 1706-8.)

It was with him simply a degree of error in the various bases suggested. (R. 1708.)

Mr. Frank E. Ward, General Manager of the Burlington System, when testifying in rebuttal for the plaintiffs, said on this subject:

"Q. Coming to the division between freight and passenger, what do you think of the train mile as a proper factor to determine that?"

A. I don't think that is proper. It would depend a good deal on the purpose for which we are undertaking to make the division. It may be for the purpose of simply making a comparison of a superintendent's performance of work on his own division, from month to month or year to year. On the other hand, it might be on a matter as important as the making of rates for freight and passem-

ger. And if for the latter, a great deal more care would be needed to be exercised in order to make a fair division.

Q. The latter is the object to which this litigation reaches, of course, to ascertaining whether the intrastate rates are compensatory. With that object in view and approaching the problem in this first step, maintenance-of-way, is it proper to divide that on the basis of train mile, as representing the use of the way?

A. My opinion is that it is not.

Of course, my opinion differs so materially from those of the accountants for the State in this respect, that I do not think the use of any of these factors, or any method that has been proposed heretofore, can really satisfactorily solve the problem. I wish it could, but I do not see that it can.

Q. Taking this as a basis, I want to ask if I correctly understand your position:

"Maintenance-of-way and structures: This account includes all repairs due to maintenance-of-way and track, bridges, trestles, fences, culverts, etc., also material and supplies used in repairing same and supervision. This expense is practically all localized and is charged to the State in which the expense is incurred. The total charge to maintenance-of-way and structures is divided between freight and passengers upon the basis of the number of train miles in each class of service."

Q. What do you think of that method of division?

A. That, as I understand it, is a method of division prescribed by the Interstate Commerce Commission. Speaking as an operating man, I would hesitate very much to accept that as a basis upon which to determine the question we have under discussion now—that is, the cost of handling State versus interstate business.

I think it omits a good many items that should be considered in trying to solve that particular problem. I do not think that division had in mind any such proposition as that we are discussing now.

Q. If that is used as a basis here to start a division of expenses, you consider it unsound?

A. Yes, sir." (R. pp. 1875, 1876.)

We can not assume that the force of Mr. Ward's condemnation of the train-mile basis to divide maintenance-of-way expenses between freight and passenger would have been lessened by the fact that he thought its use for this purpose was an invention of the State's accountants. The basis read to him in the foregoing question is taken from Iron Mountain exhibit 3, statement 5. (R. p. 2310.)

Mr. Nay, in his rebuttal testimony, says that train mileage division between passenger and freight for maintenance-of-way expenses is the best unit found for comparative purposes.

"These statistics are compiled for comparative purposes. They do not purport to cover the actual separation between freight and passenger of those common expenses. By using the same unit from

month to month we are able to make comparisons of one month with another." (R. p. 2034.)

Mr. Nay admits that much of his criticism of the car mile division of maintenance-of-way expenses in the State's plan would apply to any other basis, but he thinks not with the same force against the revenue basis. (R. p. 2042.)

In re-direct of Mr. Nay this occurs:

"Q. You stated on cross examination that the revenue does not represent the expense of maintenance-of-way, any more than the car miles.

Do you mean by that to say that that expense is not represented by either?

A. Yes, sir; I mean that neither one causes the expense.

Q. That class of expense is shown by the evidence in this case to grow largely out of causes other than operation. The testimony shows that 75 to 90 per cent of it is caused by the elements and other independent causes.

Now, in that view there is no connection or relation between that and car miles to the extent that it is not caused by operations.

That is true, is it not?

A. Yes, sir.

Q. You have already stated that?

A. Yes, sir.

Q. If it is true, it is more or less of an overhead expense rather than direct expense of transportation, is it not?

A. Yes, sir; I should think it might very fairly be treated as an overhead expense.

Q. If you had to divide it on some other basis I believe you stated it is your view it should be divided on the revenue basis?

A. Yes, sir.

Q. But if you had to plan some other basis than the revenue, what basis would you take? How would you treat it?

A. My second choice would be to treat it as an overhead expense and divide it on the basis of the direct expense." (R. pp. 2074-5.)

Mr. F. P. Johnson, who had charge of the accounts for the Iron Mountain in this case, testified, in rebuttal, and criticised the State's plan of dividing maintenance-of-way expenses between local and through trains on the car-mile basis and said: "The larger the proportion of that expense that is due to the elements the less accurate would any unit, either of car miles or train miles become, as has been stated by other witnesses, neither the train miles nor the car miles would have any effect upon that class of expense." He says it is more of a general expense than any other item in the operating department. (R. p. 1986.)

Mr. Wharton, who prepared the State's exhibits, testified in cross examination that he made no division of his own between freight and passenger for maintenance-of-way expenses; he *Defendants' Evidence.* simply took the division of the railway company of it, and considered it good enough for the purpose he used it. He was asked if he regarded it as a proper basis and said: "As between freight and passenger, it was probably good enough for the purposes of this case. I would not care to pass a personal opinion on that, because I have not studied it sufficiently to form an opinion as between freight and passenger." (R. p. 1031.)

He says that while it was necessary to have this division correctly made in order to obtain correct results, and after he used it the only study necessary was as to a division of freight expenses between local and through and passenger expenses of the various classes. He was asked why he departed from the train mile and adopted the car mile between local and through and said because the car mile would more nearly represent the differences in cost. (R. p. 1032.)

Mr. Ludlam testified that his firm (Haskins & Sells) had prepared a statement which he thinks reflects pretty closely the cost of the intrastate and interstate in Arkansas, and in preparing that statement they had not gone back of the statement prepared by the railroad in dividing maintenance-of-way expense between passenger and freight. (R. p. 1321.)

We call especial attention to the testimony of Mr. Conway W. Hillman on this subject. Mr. Hillman is an expert railroad accountant and represented the State of Minnesota in its accounting matters in its rate case. He was a witness for the State in this case. He testified generally as to the various bases adopted by the State's accountants in this case, and on cross examination this testimony was given on this subject:

"Q. The expense between passenger and freight in these exhibits filed by the State, is divided on the train mile, isn't it?

- A. I don't know, sir.
- Q. That is the train mile made by each class of train?
- A. That is whatever the loads had done, I don't follow that.
- Q. Which would you regard as the better method of division?
- A. Which two, do you mean?
- A. The train mileage or car mileage?
- A. Neither of them.
- Q. Give me your views upon that subject?
- A. My views on that subject would be that the expense of maintenance-of-way and structures should be divided upon the basis of the train weights in lieu of train mileage.
- Q. Explain to me what you mean by train weights?
- A. I mean that a passenger train will weigh approximately 250 tons, and a freight train will weigh approximately 900 tons, engine

and tender included. The division should be made upon a gross ton-mile basis.

Q. You would adopt that instead of the train-mile basis?

A. Yes, sir.

Q. When you say trains, you speak of the weight without regard to the contents, do you?

A. No, sir; I mean the weight of the engine and the tender, and the weight of each car, what you call light weight of each car, that is the weight of the car without any load on it, and to that, I add the number of tons which are loaded on those cars, so it would be the weight of the motive power, the weight of the rolling stock and the weight of the live load and also the weight of the caboose.

Q. That is freight?

A. Yes, sir.

Q. On the passenger, you adopt the same method?

A. Yes, sir; the weight of the engine and tender, the weight of the equipment, the rolling stock, the average passenger miles, taken at the basis of 150 pounds each, an allowance for 50 pounds of baggage per person, and the express, varying according to the amount of express which the road carries, light or heavy; mail the same way, the load of your cars." (R. pp. 1509, 1510.)

On re-direct he said if this data was not obtainable (and it was shown it was not in this case) he would take the train weights and obtain the percentage which exists in the train mile and take the car mile and that percentage and add the two together and divide by two and use that, putting the car mile on the train mile. (R. pp. 1521, 1522.)

Judge Sanborn, in his opinion in the Minnesota Rate Case, referred to Mr. Hillman's testimony, which was evidently to the same effect as here given, and said that no other witness came to support him, and, on the other hand, a number of witnesses of long experience in operating railroads had favored the revenue basis, as we understand the opinion, for the division of maintenance-of-way expenses between passenger and freight; and that was the basis adopted by the master and confirmed by Judge Sanborn.

Shepard v. Northern Pac. Ry. Co., 184 Fed. Rep. 765, on pp. 812, 813.

Mr. Wilmering thus expressed his views on the subject:

A. But the basis I have suggested here, in my judgment, is a fair basis—an equitable and a just basis, for the reason that the expense of "maintenance-of-way" is common to all classes and characters of traffic. It is not caused by any particular class of traffic, and the expense or outgo for "maintenance-of-way" is caused by the acts of Providence, acts of God, whether a washout, deterioration of ties owing to weather conditions. In all truth and in all logic, the car mile ought to be accepted for the basis of division between local and through.

Q. If that is true, why should it not also be used as a basis of division between passenger and freight trains?

A. Well, we have made a concession to the railroad companies in that respect and have accepted the theory advanced by the railroad officials themselves.

They were first to advance train-mileage for a division between passenger and freight business, and where the charges could not actually be located, in a great many of the instances, between passenger and freight, might be assigned directly to passenger and freight traffic accounts.

One of the principal reasons why we have accepted the revenue train mileage basis for a division between freight and passenger, where the expenses can not be located, is just a concession to the majority of the accounting officials. It is accepting the railroad's own theory." (R. p. 1139.)

The defendants introduced a vast amount of testimony tending to prove that the car mile was the proper factor with which to divide maintenance-of-way expenses. It was introduced to sustain the State's plan of dividing maintenance-of-way expenses between local and through freight trains on the one hand and mail and express cars and passenger coaches on the other hand. It took wide scope and goes to the general proposition that the car mile is the factor reaching nearest actual results. The train mile is incidentally brought into the discussion, but most of it is explaining why the car mile is the appropriate factor for this item of expense. Its consideration is necessary in the connection given, but attention is called to it here as it strongly reinforces the objection to the train mile in furnishing a better and more reliable factor.

But other testimony should not be needed. The plaintiffs have predicated their case on the revenue basis as the one offering the best solution of this whole problem and Mr. Gray criticises the State plan severely for using different factors with which to divide different items. (R. pp. 1907-1909.)

The use of different factors by the State is consistent with its plan, seeking in each instance the factor nearest applicable, but it is wholly inconsistent with the railroads' plan, which offers the revenue theory as the best unit yet found.

Certainly it should not be departed from unless good cause is shown in the selection of a factor more nearly accurate for the particular item than the revenue. Have they found it in the train mile? No witness for either side commends it—many condemn it.

Mr. McPherson says it will do between freight and passenger but must be discarded when a division between interstate and intrastate is made. Certainly when its use ultimately is for the latter purpose all the reasons he assigns against it for a division of intrastate and interstate must apply.

Mr. Doddridge, Mr. Nay and Mr. McPherson tell of the use of

the train mile for comparative purposes and evidently confine its use to such. Mr. Nay advocates the revenue basis of dividing maintenance-of-way and next to it the overhead plan.

Mr. Johnson advocates the latter and so does Mr. Byers. The fallacy of the overhead plan, however, is thoroughly explained in Mr. Ludlam's surrebuttal testimony. Mr. Byers condemns the train mile but considers it less erroneous than the car mile.

Mr. Gray considers it more unreliable than the car mile, and that it is too unreliable to be used to divide maintenance-of-way expenses between freight and passenger when seeking a division between State and interstate.

Mr. Ward's condemnation of it for the exact purpose used by the railroads in this case is emphatic and positive. He supposed the quotation from exhibit 3 was a formula of the Interstate Commerce Commission for same report and says for the purposes of this suit this basis omits a good many items that should be considered and for the purposes of this suit is unsound.

The train-mile basis attributes an unreasonable share to passenger traffic. Turn to the following account:

Maintenance-of-equipment, \$723,431.33, is assigned to freight and \$312,134.74 is assigned to passenger (exhibit 3, R. p. 2293).

The expenses of repairs to freight and passenger cars are compiled separately and only expense of a common nature divided between freight and passenger on a train mile (exhibit 3, statement 5, R. p. 2310). Turning to the detail of this account and getting to the actual facts when the train mile is not used but where a separation is made, actually between the two classes of service, and it is found: Repairs of passenger cars, \$132,100.40, whole line; repairs of freight cars, \$748,317.08, whole line. (R. p. 2304.) Just 15 per cent of the actual expenses is attributable to passenger cars when the expenses are located. Next is found the respective freight car repairs in Arkansas, \$398,992.36, and passenger car repairs in Arkansas, \$77,775.19, less than 15 per cent actually allocated to passenger cars. When the train mile is used 47.53 per cent is attributed to passenger traffic.

In station expenses the wages of employees handling both freight and passenger are divided 75 per cent freight and 25 per cent passenger. (R. p. 2310.) The railroads made an arbitrary division of this expense on above percentages, which are within one per cent of the proportion had the revenue been used. This arbitrary division was not complained of by the State, as it is one in frequent use, and is referred to in *Smyth v. Ames*. But why not use that arbitrary division for maintenance-of-way? If correct in one it would be in the other; but instead of taking a factor commonly used, they use the train mile and assign 47.53 per cent to passenger.

The mixed train expense is also divided between passenger and freight on arbitrary percentages of 75 and 25 (R. p. 2311) and it was

explained in the testimony that the Interstate Commerce Commission recognized this as a proper arbitrary.

The total amount of taxes paid in each State is divided by the railroads between freight and passenger on the revenue basis. (R. p. 2312.)

Why train mileage is the factor to divide the expenses of maintaining the way and the revenue the factor to divide the taxes on the way is an incomprehensible distinction.

Rentals for use of track—both debits and credits—are divided on revenue basis (R. p. 2312), and yet the upkeep of the tracks divided on a train-mile division.

There is an unaccountable and unaccounted-for change of base from the revenue to the train mileage and the effect of it on the railroads' own showing, as to one of these items only, is to reduce the rate of return on the property (before the extra expense is added) from 7.04 per cent to 4.7 per cent. If the revenue basis was substituted for train miles as to all other items where train mile is used, it is apparent that the return on the intrastate would far exceed 7.04 per cent. So far as our investigation goes, wherever the revenue theory has been accepted it has been applied to the division between freight and passenger.

In the Missouri Rate Case we are not sufficiently familiar with the record to state how the railroads divided it in their exhibits, but

*Decisions
on the
Train-mile
Basis.* Judge McPherson had the accountants on each side to assist him in compiling the divisions according to his judgment, and it is found from this quotation from the statement of the case that he divided maintenance-of-way between freight and passenger on the revenue basis. St. L. & I. R. Ry. Co. v. Hadly, 168 Fed. Rep.

317, on page 322. "For reasons stated in an opinion herein filed, the revenue basis has been and is adopted as the only logical basis to use in arriving at a correct conclusion. The one basis or the other as a whole must be adopted. Either side can make a better showing by adopting the one basis in part of the accounting, and the other basis for the other. Neither should be and is allowed to do this."

In the opinion he says:

"The State earnings are made known to a certainty, concerning which the experts on both sides agree. And whether in earning them the company gains a profit, or sustains a loss, is dependent upon the expense in making such earnings. Some of these expenses can be definitely specified, but others, like maintenance-of-way, salaries of all officers, including ticket agents, handlers of freight, terminal expenses, compensation of many laborers, and other things, are all occasioned for carrying both freights and passengers, State and interstate, and miscellaneous of each. And herein is the problem how to make the apportionment.

"The track mile, or train or car mile, does not furnish the solution,

because every one agrees that neither of those methods will do, and no one of the experts or counsel on either side asks for such a solution."

Id., on page 348.

In deciding the Oklahoma Rate Case, Judge Hook says:

"Having the total value of the railroad property in the State, the gross revenue from all operations therein, the gross revenue from each class of business, interstate and local, freight and passenger and mail, express and miscellaneous, and the proportionate property value devoted thereto respectively, there must then be ascertained the net revenues from the local freight and passenger business so that their relation to the value of the property employed in producing them may be disclosed and the ultimate question answered, towit, whether the rates from which the net revenues come are reasonably compensatory. At this point arises the principal controversy. A substantial part of the expense of railroad operation is incurred indiscriminately in all its business. For example, the maintenance-of-way and structures in a State, which makes one of the most important general expense accounts, is almost entirely for the common benefit of all traffic, interstate and local, freight and passenger. As between freight and passenger traffic a large part of the expenses may be directly located and distributed, and it is the custom to apportion the remainder by various rules not necessary to mention here; but generally speaking it is impracticable in railroad business to separate expenses into the interstate and local, and the minor and incidental operations. From the very nature of the case, therefore, some rule must be adopted for charging to each of them their fair and equitable proportion of the common expense. Of necessity it must proceed upon average conditions commonly known or shown to exist, and it argues nothing to say that it does not fully apply to this or that exceptional instance. A general rule based on experienced observation is fair, and what is lost by its application in one place is doubtless gained in another, and an equitable equilibrium maintained. Of those suggested the revenue basis appears to be much more uniform in its adaptability, and much less subject to substantial objection. It has been frequently employed (citing cases). It is the one to which the mind naturally turns in every problem involving the charging of common expense to different departments of a business. When a general or common expense can not be located, what is more obviously reasonable than to say in the first place the different branches or departments shall bear it according to the value of their products or their gross earnings, and then make due allowance for exceptional conditions if any are perceived. That seems at the start to satisfy the mind intent on equity. It is a working basis for the distribution of all expense incident to a railroad business among its revenue yielding operations of every character."

M., K. & T. Ry. Co. v. Love, 177 Fed. Rep. 493.

This case, being on the issuance of a temporary injunction, was carried to the Circuit Court of Appeals and there affirmed. The opinion was rendered by Judge Sanborn, who upon this subject said:

"In order to ascertain the net return from the intrastate passenger business and from the intrastate freight business of each of these companies, it was necessary for the Circuit Court to find and deduct from the gross earnings of each of these classes of business the cost of doing that particular business. There were many items of cost of doing all the business of the company in Oklahoma that disclosed the class of business on account of which they were incurred, and these are called 'allocated items.' But there was a large percentage of the cost of doing all the business of each of the companies in Oklahoma, like the cost of the maintenance-of-way and structures, which was incurred for the common benefit of its interstate business and its intrastate business, and there is no method of dividing these items of common cost between these classes of business which is sure to be mathematically accurate. Many methods have been and still are suggested. The question was: Which was the most equitable, the most likely to produce a fair and just division? And upon this subject there was much testimony of many witnesses, whose long experience in the practical operation of railroads, exceptional opportunities for extensive observation, and peculiar knowledge qualified them to form and express opinions. The Circuit Court examined all this evidence, considered the arguments of counsel, and adopted the revenue basis, and assigned these items of common cost to the classes of business in proportion to the gross earnings of these respective classes.

"Counsel now argue that there were other available methods, more likely to be fair and just, which they insist the court should have preferred. They now suggest (1) the ton-mile and passenger-mile basis; (2) the division of the items of common cost in the same proportion that the allocated items assigned themselves; (3) the subtraction of the aggregate of the items of common cost from the gross earnings of all the business, the division of the balance between the various classes of business according to their respective gross earnings, and the subtraction therefrom of the items respectively allocated to these classes. There is no basis of division that is free from objection and criticism. But the decisive preponderance of the evidence is that the revenue basis is the most likely to be just and fair. Much that has been said concerning the use of this basis for the apportionment of the value of the property is applicable to its employment for the division of items of common cost. No reasons for the use of either of the other bases that seem to us so cogent and persuasive as those given by Judge Hook at pages 498, 499, of 177 Fed. Reporter, for his adoption of the revenue basis have been called to our attention or occur to us. The use of that basis is sustained by many decisions, and it can not be held to be erroneous or mistaken."

Love v. Atchison, T. & S. F. Ry. Co., 185 Fed. Rep., on 330.

We have heretofore referred to Judge Sanborn's opinion in the Minnesota Rate Case, rejecting the basis advanced by Mr. Hillman—the train weight. Not being familiar with the Minnesota record, we can only gather the facts from the opinion, and it seems that the revenue basis was applied by the master to both a division of property and expenses between passenger and freight, and the master's finding approved by Judge Sanborn. It is certain that Judge Sanborn accepted the revenue basis as a sound factor for application both to property and expense. While we radically differ with that opinion, and think the evidence in this record is convincing that that basis is of no value for either, certainly if used for the other items it should be used for the common ones. The revenue bases has been adopted, after consideration, so far as our investigation has gone, in only three cases, Minnesota, Oklahoma and Arkansas, where it was tried out. Judge VanDeventer adopted it in this case, on the preliminary hearing, but on the final hearing, when the facts were fully developed, Judge Trieber declared it "clearly wrong." Judges Hook, McPherson, Sanborn and Trieber each declare the revenue basis the proper division of maintenance-of-way, and so does the Circuit Court of Appeals of the Eighth Circuit. Doubtless due to oversight in preparing his calculations, Judge Trieber overlooked that both sides had in their exhibits used the train mile division between passenger and freight, the railroads as the foundation for separating freight and passenger before each were separated into intrastate and interstate, and the State solely to take the railroads' assignment to each class of traffic the respective expenses and test out their method of apportioning such items between intrastate and interstate. We do not for a moment advocate the revenue basis for dividing maintenance-of-way expenses between passenger and freight as right in principle, but do say that if the revenue basis is to be used to divide the property between freight and passenger and between State and interstate and the expenses between State and interstate, then it must also be used to divide the maintenance-of-way and other common expenses between freight and passenger; and, furthermore, that the factor here used, the train mile, set apart to passenger traffic an unreasonable and undue amount of expense and to an extent clearly not attributable to the passenger traffic.

As seen when actual expenses are divided on repairs of cars only 15 per cent goes to passenger, and, when the revenue is used, only 26 per cent goes to passenger. We have used maintenance-of-way to illustrate the error of using train mile to divide common expenses. As is seen in the statement of plaintiffs' bases (R. p. 2310), it is used to divide other common expenses between passenger and freight. In maintenance-of-equipment common expenses not definitely located to freight cars or passenger cars are so divided; water and other supplies in engine service and engine house expense are so divided

between passenger and freight; "other transportation expenses," not definitely located, are so divided. The extent of this erroneous basis can not be ascertained from the exhibits as they stand. As to maintenance-of-way alone, it amounts to over \$101,000, a sum sufficient to more than absorb the extra expense of intrastate traffic and change what on the face of the railroad exhibits might be a confiscatory return into one which is unquestionably a compensatory return upon the property.

As explained in the evidence (R. pp. 2286-2289), the State's accountants made an error in their exhibits in regard to Pullman mileage; the railroads in their exhibit 56 attempted to correct it and also made an error, but both errors were carefully worked out. The railroads filed a supplemental exhibit, 56-A. (R. p. 2471.) The amount of error against the interstate is, in dollars, \$29,705.71; a difference in return on property of about six-tenths of one per cent. It reduces the return on property shown on State's exhibit "O" (put in at pp. 2540, 2541), from 7.69 per cent to about 7.09 per cent.

In exhibits made part of this brief this correction is made.

Judge Trieber says in his opinion, referring to maintenance-of-way expense:

"In view of these facts, any attempt to apportion this item of expense on the ton, car or train mileage would be an injustice to the roads. The court is of the opinion that the straight revenue basis will get more accurate results. The difference in intrastate and interstate rates will be taken care of by proper allowance to be made on the final calculations of the entire cost." (R. p. 2623.)

Again he says at page 2608: "The train basis is conceded by all as the least accurate."

Elsewhere in the opinion for reasons given he finds the intrastate freight rates are 50 per cent higher than interstate and passenger rates 3.48 per cent higher intrastate than interstate. (R. p. 2619.)

The railroads' statistics are that freight intrastate revenue is 98.18 per cent higher than interstate and passenger 3.48 per cent; but the learned Judge, taking into account all the various elements of extra cost of intrastate freight traffic, concluded that for the reasons given by him that 50 per cent was the proper allowance to be made for the difference in intrastate freight revenue or rates.

We have requested Messrs. Haskins & Sells to prepare an exhibit to this brief, in order to illustrate the difference in returns, had Judge Trieber discarded the train-mile basis for dividing maintenance-of-way expenses between freight and passenger and adopted the revenue basis, which he said should be adopted with the aforesaid allowances. It also adds two small items of omitted earnings, according to Judge Trieber's opinion erroneously omitted. (R. pp. 2599, 2600.) The exhibits follow the State's exhibits in other respects.

The exhibits are as follows:

COMMENTS REGARDING EXHIBIT "AA" EXHIBIT "BB," EXHIBIT "CC."

The total maintenance-of-way and structure expenses have been divided between "freight" and "passenger" on the basis of the revenue derived from each class of service, as shown by exhibit No. 3. The proportion thereof so applicable to freight has been divided between "local" and "through" trains on the basis of the engine and car miles of these trains, as shown by page 1 of exhibit "K." The proportion thereof so applicable to "passenger" has been divided between the various classes of cars hauled in passenger trains on the basis of the car miles to each class during October, 1907.

The value of property has been divided between "freight" and "passenger" on the basis of the revenue derived from each class of service, as shown by exhibit No. 3. The proportion thereof so applicable to "freight" has been divided between State and interstate on the basis of the revenue derived from each class of service after equalizing such revenue by eliminating from the State revenue the excess of State revenue over interstate revenue on the 50 per cent basis stated by Judge Trieber. The proportion so applicable to "passenger" has been divided between mail, express, State and interstate, on the revenue basis after equalizing such revenue by eliminating from the State revenue the excess of State revenue over interstate revenue on the 3.48 per cent basis, stated by Judge Trieber.

All expenses, other than those of maintenance of way and structure, have been distributed in the same manner as in exhibits "J," "L" and "N," with corrections made covering passengers carried in Pullman cars.

STATE OF ARKANSAS—RATE MATTER

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Freight Operating Expenses in Arkansas—For the Six Months Ended December 31, 1907—Divided
Between Local and Through Train Service and Between Intrastate and Interstate Business.

	TRAIN COSTS	OTHER COSTS			
	Local (1)	Through (2)	State (3)	Interstate (4)	Total (5)
1—MAINTENANCE OF WAY AND STRUCTURES	\$131,358.17	\$ 642,247.05			\$ 773,605.22
2—MAINTENANCE OF EQUIPMENT:					
(a) Locomotives:					
(1) Yard,	\$ 13,453.83	\$ 55,681.97			\$ 69,135.80
(2) Road,	43,733.35	70,807.25			114,540.60
(b) Freight Cars,	107,288.53	370,607.11			477,895.64
(c) Supervision and General,	15,378.22	46,481.07			61,859.29
Total Maintenance of Equipment	\$179,853.93	\$ 543,577.40			\$ 723,431.33
3—TRAFFIC EXPENSES,			\$ 11,899.29	\$ 76,835.13	\$ 88,734.42
4—TRANSPORTATION EXPENSES:					
(a) Station Expenses,			\$ 77,821.13	\$ 155,805.81	\$ 233,626.94
(b) Yard and Terminal Expenses,	\$ 57,085.42	\$ 236,262.07			293,347.49
(c) Fuel and Locomotive Expenses,	59,301.61	162,303.79			221,605.40
(d) Enginehouse Expenses,	15,194.55	38,439.58			53,634.13
(e) Road Enginemen and Trainmen,	165,866.65	301,758.52			467,625.17
(f) Other Train Expenses,	34,957.06	97,355.81			132,312.87
(g) Loss and Damage—Freight,	10,083.35	25,363.84	\$ 30,972.03	\$ 96,537.35	127,509.38
(h) Supervision and General,			3,299.25	7,656.48	46,402.92
Total Transportation Expenses,	\$342,488.64	\$ 861,483.61	\$112,092.41	\$ 259,999.64	\$1,576,064.30
5—GENERAL EXPENSES,	\$ 27,342.73	\$ 85,611.31	\$ 5,182.96	\$ 14,081.24	\$ 132,218.24
6—TOTAL OPERATING EXPENSES,	\$681,043.47	\$2,132,919.37	\$129,174.66	\$ 350,916.01	\$3,294,053.51
7—DIVISION OF TRAIN COSTS BETWEEN INTRASTATE AND INTERSTATE BUSINESS:					
(a) Local Trains:					
(1) Intrastate Freight—26.00% of Total,	*\$177,071.30		\$177,071.30		
(2) Interstate Freight—74.00% of Total,	*\$503,972.17			\$ 503,972.17	
(b) Through Trains:					
(1) Intrastate Freight—4.96% of total,		\$ *105,792.80	105,792.80		
(2) Interstate Freight—95.04% of total,		*\$2,027,126.57		2,027,126.57	
8—TOTAL COST OF INTRASTATE AND INTERSTATE BUSINESS,			\$412,038.76	\$2,882,014.75	\$3,294,053.51

*In Red Ink on Original Exhibit.

EXHIBIT "AA"

STATE OF ARKANSAS—RATE MATTER

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Passenger Operating Expenses in Arkansas—For the Six Months Ended December 31, 1907—Divided Between Train and Other Costs, and Between Intrastate, Interstate, Mail, and Express Business.

	TRAIN COSTS.....	OTHER COSTS.....	TRAIN AND OTHER COSTS.....					
	Baggage, Diner, and Cafe-Obs- ervation (1)	Coach (2)	Pullman (3)	Intrastate (4)	Interstate (5)	Mail (6)	Express (7)	Total (8)
1—MAINTENANCE OF WAY AND STRUCTURES,	\$ 37,579.23	\$121,984.94	\$ 59,446.58			\$ 33,025.88	\$ 29,034.66	\$ 281,071.29
2—MAINTENANCE OF EQUIPMENT:								
(a) Locomotives,	\$ 22,254.81	\$ 72,245.45	\$ 35,206.63			\$ 19,559.24	\$ 17,195.48	\$ 166,461.61
(b) Passenger Train Cars,	14,768.53	47,942.86				12,969.06	11,418.70	87,099.15
(c) Supervision and General,	8,553.77	27,767.96	8,130.07			7,509.18	6,613.00	58,573.98
Total Maintenance of Equipment,	\$ 45,577.11	\$147,956.27	\$ 43,336.70			\$ 40,037.48	\$ 35,227.18	\$ 312,134.74
3—TRAFFIC EXPENSES,				\$ 25,588.50	\$ 17,389.31	\$ 6,196.01	\$ 4,102.26	\$ 53,276.08
4—TRANSPORTATION EXPENSES:								
(a) Station Expenses,	\$ 73,406.98	\$238,299.92	\$116,128.25	\$ 52,377.81	\$ 4,678.63	\$ 2,925.00		\$ 59,381.44
(b) Yard and Train Expenses,						64,515.70	\$ 56,718.91	549,069.76
(c) Loss and Damage—Baggage,	4,869.95	15,809.27	7,702.59	984.39	668.92			1,653.31
(d) Supervision and General,				3,541.66	356.19	4,432.13	3,764.27	40,476.06
Total Transportation Expenses,	\$ 78,276.93	\$254,109.19	\$123,830.84	\$ 56,903.86	\$ 5,703.74	\$ 71,272.83	\$ 60,483.18	\$ 650,580.57
5—GENERAL EXPENSES,	\$ 20,015.52	\$ 64,949.94	\$ 28,086.03	\$ 10,224.79	\$ 2,861.66	\$ 18,665.07	\$ 15,964.18	\$ 160,767.19
6—TOTAL OPERATING EXPENSES,	\$181,448.79	\$589,000.34	\$254,700.15	\$ 92,717.15	\$ 25,954.71	\$169,197.27	\$144,811.46	\$1,457,829.87
7—DIVISION OF BAGGAGE, DINER, AND CAFE-OBSERVATION COSTS BETWEEN COACH AND PULLMAN PASSENGERS:								
(a) Passenger miles in Pullman—15.41% of total	\$ *27,961.26			\$ 27,961.26				
(b) Passenger miles in Coaches—84.59% of total	\$*153,487.53	\$153,487.53						
			\$742,487.87	\$282,661.41				
8—DIVISION OF COACH AND PULLMAN COSTS BETWEEN INTRASTATE AND INTERSTATE BUSINESS:								
(a) Coach:								
(1) Intrastate—66.13% of total,		*\$491,007.23			\$491,007.23			
(2) Interstate—33.87% of total,		*251,480.64			\$251,480.64			
(b) Pullman:								
(1) Intrastate—18.00% of total,			\$ *50,879.05	50,879.05				
(2) Interstate—82.00% of total,			*231,782.36	231,782.36				
9—TOTAL COST OF INTRASTATE, INTERSTATE, MAIL AND EXPRESS BUSINESS,				\$634,603.43	\$509,217.71	\$169,197.27	\$144,811.46	\$1,457,829.87

*In Red Ink on Original Exhibit.

EXHIBIT "BB"

STATE OF ARKANSAS—RATE MATTER

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Revenue, Expenses, Net Earnings and Return upon the Value of the Property in Arkansas—For the Six Months Ended December 31, 1907—With Miscellaneous Earnings, Taxes, Rentals
Hire of Equipment, Dining Car Deficit, and Value of Property Divided Between the Various Classes of Business on a Gross Revenue Basis.

	FREIGHT			PASSENGER					
	Intrastate	Interstate	Total	Intrastate	Interstate	Mail	Express	Total	Total Business
1—REVENUE:									
(a) Freight, Passenger, Mail and Exp. . .	\$ 640,248.17	\$ 4,133,210.33	\$ 4,773,458.50	\$ 836,542.20	\$ 568,476.21	\$202,637.71	\$133,910.82	\$1,741,566.94	\$ 6,515,025.44
(b) Miscellaneous,	16,469.41	106,345.00	122,814.41	22,170.87	15,066.07	.....	.....	37,236.94	160,051.35
Total Revenue,	\$ 656,717.58	\$ 4,239,555.33	\$ 4,896,272.91	\$ 858,713.07	\$ 583,542.28	\$202,637.71	\$133,910.82	\$1,778,803.88	\$ 6,675,076.79
—EXPENSES:									
(a) Operating Expenses (See Exhibits "DD" and "EE"),	\$ 412,038.76	\$ 2,882,014.75	\$ 3,294,053.51	\$ 634,603.43	\$ 509,217.71	\$169,197.27	\$144,811.46	\$1,457,829.87	\$ 4,751,883.38
(b) Taxes,	21,851.02	141,094.67	162,945.69	128,582.96	19,418.42	16,743.16	4,457.95	59,202.49	222,148.18
(c) Rentals,	2,156.94	13,927.62	16,084.56	2,821.46	1,916.81	665.63	440.05	5,843.95	21,928.51
(d) Hire of Equipment,	24,029.57	155,161.89	179,191.46	*499.21	*339.15	*117.77	*77.86	*1,033.99	178,157.47
(e) Dining Car Deficit, . . . . .	.....	.....	.....	704.89	479.01	.....	.....	1,183.90	1,183.90
Total Expenses,	\$ 460,076.29	\$ 3,192,198.93	\$ 3,652,275.22	\$ 666,213.53	\$ 530,692.80	\$176,488.29	\$149,631.60	\$1,523,026.22	\$ 5,175,301.44
3—NET EARNINGS,	\$ 196,641.29	\$ 1,047,356.40	\$ 1,243,997.69	\$ 192,499.54	\$ 52,849.48	\$ 26,149.42	\$ *15,720.78	\$ 255,777.66	\$ 1,499,775.35
4—ASSESSED VALUATION OF PROPERTY, DOUBLED,	\$1,372,650.77	\$13,292,421.58	\$14,665,072.35	\$2,526,637.02	\$1,776,957.92	\$617,006.68	\$407,608.03	\$5,328,209.65	\$19,993,282.00
5—PERCENTAGE OF NET EARNINGS TO VALUATION,	14.33%	7.88%	8.48%	7.62%	2.97%	4.23%	*3.86%	4.80%	7.50%

SUMMARY OF ABOVE

NET EARNINGS:

Freight,

Passenger,

Total,

TOTAL INTRASTATE BUSINESS	TOTAL INTERSTATE BUSINESS	TOTAL MAIL AND EXPRESS BUSINESS
\$ 196,641.29	\$ 1,047,356.40	.....
192,499.54	52,849.48	\$ 10,428.64
\$ 389,140.83	\$ 1,100,205.88	\$ 10,428.64

ADD—PER JUDGE TRIEBER'S DECISION: (R. pp. 2599, 2600)

Dividend from Pacific Express Company,

Rents from Passenger Station at Little Rock,

Total,

\$ 2,100.00	.....	\$ 15,984.00
\$ 391,240.83	\$ 1,100,205.88	\$ 26,412.64

ASSESSED VALUE OF PROPERTY, DOUBLED:

Freight,

Passenger,

Total,

\$1,372,650.77	\$13,292,421.58	.....
2,526,637.02	1,776,957.92	\$1,024,614.71
\$3,899,287.79	\$15,069,379.50	\$1,024,614.71

PERCENTAGE OF NET EARNINGS TO VALUATION,

*In Red Ink on Original Exhibit.

EXHIBIT "CC"

10.03% 7.30% 2.58%

Thus it is seen that adopting the State's exhibits, which are in the main followed by the trial court except on maintenance-of-way and the proportion on local and through trains, which will be discussed at length, the return on the property is far above a confiscatory rate.

Exhibit "O" gives the total intrastate return 7.69 per cent, which should be reduced to 7.09 per cent; whereas, following Judge Trieber in the matters mentioned, gives a return of 10.03 per cent on the property used in the total intrastate traffic.

We think when the whole evidence is analyzed that the court will be convinced that the car mile is the proper factor for maintenance-of-way expenses, not only for local and through trains but for freight and passenger. The expert opinion from leaders of thought in railroad operation is practically unanimous for the car mile or "wheelage" basis as the factor to apportion maintenance-of-way expenses, and it has met the approval of this court. What is stronger than opinion evidence is the admitted fact that it is the accepted basis, when railroads contract with each other for the use of ways. Even these two plaintiff roads here have a contract between themselves apportioning maintenance-of-way expenses between themselves for a leased track on the car-mile basis.

Whatever opinion the Court may reach as the proper one—revenue or car mile—certainly in face of their own testimony the plaintiffs are not justified in using the train mile between passenger and freight, and, if it be rejected, then their case falls, without going into the defendants' evidence or its plan of division, which even under the harsh divisions made before they attempted allocation show a compensatory return.

OTHER ERRORS IN PLAINTIFFS EXHIBITS.

There are other errors in plaintiffs exhibits to which attention is next called.

None of the errors here referred to were eliminated in the State's exhibits because it would have involved a world of confusion to have changed this or that item to conform to what we believed the evidence justified; so that the State's exhibits contain all the errors herein complained of. All mathematical errors in plaintiffs' exhibits were corrected. The Iron Mountain, finding they had duplicated a bridge on their property, revised their exhibits and took it out, and the Southwestern, finding it had erroneously computed extra cost, filed revised exhibits, but the errors herein referred to are errors of method, not of figures. They must be adjusted by determining the correctness of the method; then the figures can be made, if the data has been produced.

The State's exhibits contain the matters herein referred to, which we contend should be corrected, and invite your attention to them prior to considering the State's exhibits.

The first item to which your attention is called under this head is charging to the Arkansas expenses all the expenses at Memphis.

Memphis Expenses Charged to Arkansas. Tennessee. Mr. F. P. Johnson introduced the exhibits for the Iron Mountain and testified regarding exhibit 2 (R. p. 2291), where it shows 1 mile and 1.07 miles, "Arkansas Division Terminals in Memphis, Tenn., " the property is not in the Arkansas assessment, being situated in Tennessee, but the earnings and expenses of that piece of road in Tennessee are all charged in the exhibits to Arkansas. (R. p. 116.)

He further explains that this represents a trackage arrangement across the bridge over the Mississippi River at Memphis and their line in Memphis, the latter being 1 mile. (R. p. 120.)

As we understand it, there is one mile owned in Tennessee, and 1.07 miles leased, being from center line of bridge into the city of Memphis, connecting with the owned track.

Mr. McPherson testified that the Memphis terminals are treated as in Arkansas for this reason:

"As to Memphis, there are substantially no earnings on the freight business in Tennessee that the Iron Mountain receives, and so far as the accident of location is concerned, it would be the same to the railway company whether delivery was made to it on the east side or the west side of the river." (R. p. 349.)

Mr. McPherson says the traffic from Memphis into Arkansas is "undoubtedly a heavy traffic." (R. p. 428.)

Mr. McPherson also testifies as to the number of trains in and out of Memphis:

There were five passenger trains and four freight trains in each direction—18 trains daily. There was one local freight each way and the others were through, and all the passenger trains were local except one. (R. p. 375.)

This would necessarily incur heavy expense for division and terminals and the expenses of Memphis must be a large item. Not only the division and terminal expenses are charged to Arkansas, but all other expenses, even the salary of counsel for the State of Tennessee, \$200 per month—is charged to Arkansas. (R. p. 184.)

Certainly a business requiring this amount of regular legal service is of considerable moment.

It may be that the extent of the Memphis expenses can be hereafter segregated and subtracted; the burden is upon the plaintiffs to do so, and they have so far failed. The Fort Smith terminal expenses can not be now ascertained as will be seen later. Where improper or doubtful sums go to make up the plaintiffs' case, the defendants do not have to prove the extent or amount of them when they prove them to exist or likely to exist, the plaintiffs have failed. A similar situation was presented in Railroad Commission of Louisi-

ana v. Cumberland Telegraph & Telephone Co., 217 U. S. 414, and what was said by the Court is applicable here:

"In the course of the trial various questions were argued as to the manner of conducting such a business as this, with regard to extensions, earnings, and disbursements, as well as questions of depreciation of plant and how to treat the amount collected therefor, and other questions of that nature. Exactly how the money which resulted from the rates in actual operation was used was not, in all cases, shown in detail, either from the books or by oral testimony. Something was left in doubt and to conjecture. In the course of the opinion of the circuit court, the following was said: 'It is urged by the commission that, included in the Louisiana investment of complainant, is a sum earned from Louisiana business, set aside in the reserve fund, and then used in extending the system in Louisiana, and now treated as a part of the Louisiana investment of the stockholders. This may be so to some extent—it is certainly possible. But it is impossible for me to determine, from the figures in the record, to what extent, if at all, it is a fact. Counsel for defendant have not themselves undertaken to indicate what, even in round figures, they consider is the sum thus earned in the business and reinvested in the business, without having been distributed to the shareholders in dividends. It will be time to consider the legal results from such a state of facts when it shall have been shown to exist in a definite sum, and not in a purely conjectural amount.' And again: 'Counsel for the Commission argued that the complainant's property in Louisiana was not all paid for with complainant's capital, but was partly paid for out of a surplus or reserve, or depreciation fund, which was accumulated by complainant from the receipts of its Louisiana business, and was then reinvested, not in repairs or maintenance, but in extensions and additions to the property. This may be a fact, but it is not shown to be a fact. The Commission has power, if it wishes to do so, to direct the books of complainant to be so kept as to show such use of receipts. In the present state of the books, this seems to be impossible. And the floating debt of the complainant would seem to be much greater than any sum which could possibly have been used from the reserve, or surplus, or depreciation fund for extensions and additions, after paying for maintenance and repairs.' (156 Fed. 831, 832.)

"If the onus rested upon the Commission to show these facts, it is evident that the obligation has not been fulfilled; but it is just here that the difficulty lies. It was obligatory upon the complainant to show that no part of the money raised to pay for depreciation was added to capital, upon which a return was to be made to stockholders in the way of dividends for the future. It can not be left to conjecture, but the burden rests with the complainant to show it. It certainly was not proper for the complainant to take the money, or any portion of it, which it received as a result of the rates under

which it was operating, and so to use it, or any part of it, as to permit the company to add it to its capital account, upon which it was paying dividends to shareholders. If that were allowable, it would be collecting money to pay for depreciation of the property, and, having collected it, to use it in another way, upon which the complainant would obtain a return and distribute it to its stockholders. That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate; but to raise more than money enough for the purpose, and place the balance to the credit of capital upon which to pay dividends, can not be proper treatment. The court below said it was impossible to find out from the books how much of this had been done, and it treated the fact as one to be explained by the Commission, and not by the complainant. In other words, while this fact was a material one, the onus was placed upon the Commission, and not the complainant, to show it. We think, on the contrary, that the obligation was upon the complainant. Now, although the books, it is said, do not show how much money collected for depreciation has been, in fact, used to increase the capital of the complainant, upon which dividends were paid to stockholders, yet, still, even if the books do not show accurately, or even at all, what disposition was made of these moneys, at any rate the officers of the complainant must be able to make up some reasonable approximation of the amount, even if it be impossible to state it with entire accuracy; and this duty rests with the complainant, in order that it may discharge the duty devolving upon it to prove that the rates were not unreasonably high under order No. 488, or, in other words, that they were unreasonably low under order No. 552. It may be that the sum, if any, thus used, was not enough to affect the claim that the rates under discussion were unreasonably low. The evidence is insufficient to show clearly that which complainant is under obligations to show."

All of the traffic—passenger and freight—leaving or entering Memphis, is necessarily interstate, and so carried in these accounts. The local trains, two freight and four passenger, after leaving Memphis, undoubtedly would do a little intrastate business before reaching the end of their division and a small part of the expense of such traffic, housing engines, etc., might fairly be attributed to intrastate business, but it is so small, it could not be found in the mass, and is easily compensated by similar items for which the intrastate gets no credit. The through passenger train from St. Louis to Hot Springs picks up some intrastate passengers, particularly from Little Rock to Hot Springs, but the plaintiffs do not attempt to charge any part of similar expenses incurred in St. Louis to those intrastate passengers.

The passenger train moving wholly in the State will pick up passengers who are interstate and carry them to Little Rock or other

junction points where they will take a train carrying them without the State and no part of their expense—being classed as interstate—would appear against the intrastate.

These divisions of expense can not be mathematically exact, but the give and take will equalize each other, and because trains doing some little intrastate traffic are housed in Memphis, is not a fair reason for throwing all of that expense into the Arkansas account just as the Little Rock terminals are thrown into the common mass and divided between State and interstate on the revenue basis.

Certainly an application of the injustice of the revenue theory is found here; from its nature, as shown from the preceding testimony the intrastate traffic picked up by these 18 trains after leaving Memphis and before reaching the next division point, would be negligible compared with the large volume of interstate traffic hauled in and out of Memphis on these 18 trains, and yet it ascribes to intrastate traffic the same share of the expense which the intrastate bears of the expenses of the Little Rock terminals. This argues to the error of the revenue theory, but the whole principle of including terminal or other expenses incurred out of the State is wrong. There is a part of this railroad in Tennessee. It is true that it is only 2.07 miles long and it is the eastern terminus of the road. That does not affect the proposition the least. It is the eastern terminus for Oklahoma and Missouri and Louisiana as well as Arkansas; and if all the expenses are to be termed "terminal expenses," why should they be charged to Arkansas any more than to Oklahoma? If nearness in geographical location is the reason the half of the Fort Smith terminal expenses should be charged to Oklahoma. Should all the Kansas City terminal expenses of a road moving through Kansas from California into Kansas City be charged up to Kansas because it is nearer the terminus than Colorado, Utah and California?

Terminal expenses are spread over the whole haul of either passengers or freight, and properly so.

Mr. Doddridge testified that the terminal expenses per car were no greater in large terminals like St. Louis and Kansas City than in small country towns. (R. p. 524.)

Other witnesses stated that the greater density of the traffic in the large terminals reduced the terminal cost per ton as low or lower than the terminal cost at small stations. Be that as it may, there are terminal expenses on every shipment and every passenger and these are necessarily spread through the journey and the rates made accordingly. The longer the journey the thinner the terminal expense, and therefore the lesser rates for the long haul than the short. That is a constant theme of the plaintiffs' rate witnesses. While the theory is not carried out—for commercial and competitive reasons—there is no reason for not spreading the cost of terminals throughout the haul, whether the rate is properly or improperly made. In contradiction of that policy of rate making, the Memphis termi-

nal expenses are all charged into the Arkansas expenses and borne by the initial part of the haul, or the final part, instead of being borne by the whole haul.

Mr. McPherson says: "The expense of bridge transportation and of the interchange of cars, with other railroads at Memphis, is not an operating expense; it is an expense that traffic bears directly." But here it is made both. The bridge toll is absorbed in the rates as the rate men testify, and the traffic bears terminal expense throughout its haul in the rates fixed for the long and short haul, and in addition to that, this method charges solely against the Arkansas traffic all the expenses of an expensive terminal, both expenses strictly terminal and general, as attorney's salaries, and we presume, taxes and rentals paid in Tennessee, as Mr. Johnson says all expense is charged to Arkansas. Terminals in cases like Memphis are expensive to operate, and represent large investment of capital. The State charged with the heavy expenses of terminals which affects its rates obtains some compensation in taxes on the large investment, but in this instance Arkansas is charged with these large expenses without the compensating return in taxes to assist its citizens to bear the rates so much the higher to meet the heavy expenses of the terminal.

On the opposite side of the State are the Fort Smith terminals situated on the Oklahoma border and serving both Oklahoma and Arkansas. The census shows Fort Smith to have a population of 23,985, and the evidence shows it is a large manufacturing and jobbing point and that about 50,000 bales of cotton, about equally from Arkansas and Oklahoma are compressed there. Mr. Johnson was called upon to give information as to

*The Fort Smith
Terminals
All Charged to
Arkansas.*

the Fort Smith terminals and put in evidence exhibit J-1. This statement shows mileage of the terminals, their assessed value and also other terminal property not assessed with right-of-way and blueprint of the terminals in the city. (R. p. 1611.) Counsel stipulated for the exclusion from printing all pictorial matter, and the stipulation (R. p. 2661), provides for not printing the blueprint, but it was construed as omitting the entire exhibit. However, under section 5 of the stipulation, we are entitled to use this evidence, and call attention to it briefly; there are 8.71 miles in the city, and the total property in the city is assessed at \$76,257, which, according to stipulation as to value (R. p. 653), should be doubled to get the value.

This is only important in an argumentative way to show that these terminals are not a "negligible quantity."

Mr. Johnson testified that he prepared the exhibits of his road in the Oklahoma Rate Case, and did not include any of the Fort Smith terminal expenses in them. (R. p. 1611.)

A statement of the physical situation may not be out of place. It is fully brought out here and there in the record. A large branch

of the Iron Mountain is from Little Rock west to Coffeyville, Kansas. It is the former Little Rock and Fort Smith road and Kansas and Arkansas Valley road, each now part of the Iron Mountain. Van Buren is a mile or two from the Oklahoma line. About five miles west of Van Buren is Greenwood Junction, where a line follows the Arkansas River into Fort Smith over its own bridge at that city. The distance is nine miles. The Iron Mountain has trackage arrangements with the Frisco road which has a bridge at Van Buren by which it sends two passenger trains a day over it; the distance to Fort Smith by this route is five miles.

All the other traffic, both from Arkansas and Oklahoma, goes by Greenwood Junction into and out of Fort Smith. Van Buren is the freight division terminal, there being large freight yards there. The train movement at Greenwood Junction is daily, 14 trains each way—28 trains, and six switch movements each day. (R. p. 422.)

Judge Trieber held it was proper to charge Memphis expenses to Arkansas, but says: "This also applies to the Fort Smith terminals, in so far as Arkansas business is concerned, the Oklahoma business being charged to that State with its proportion of expense." (R. p. 2602.)

We can not understand how the learned Judge made this error, unless it occurred in this way:

It was in testimony that the general attorney for Oklahoma and Western Arkansas lived in Fort Smith, and his expenses were divided between Arkansas and Oklahoma (R. p. 149), but that has nothing to do with the terminal expenses of Fort Smith. The uncontradicted testimony of the railroad's accountant is as follows:

"Q. I would like a statement of the amount of property owned there for terminal purposes, at the same time. You will furnish us with this, will you? (This was later furnished, exhibit J-1.)

A. Yes, sir.

Q. Now, Mr. Johnson, how do you charge the expense of the Fort Smith terminal? To what accounts does that go?

A. What expense accounts?

Q. Yes, I mean geographically, where is it charged?

A. The State of Arkansas. Now the train service that passes through Fort Smith and Van Buren is divided on a mileage basis, but the station and yard service is charged to the State of Arkansas at Fort Smith.

Q. That is what I am referring to—the exhibit in your testimony—it is charged to the State of Arkansas?

A. Yes, sir.

Q. Have you in your office any separation of the terminals expenses of Fort Smith from other expenses?

A. No, sir.

Q. Is there any way that that could be ascertained from the books kept in your office?

A. I don't believe that the entire expense of the Fort Smith terminals could be determined now over that period. There are certain items that could be, but others that come from labor and repairs—the same conditions prevails at Kansas City during the Missouri Rate Cases. We were unable to get that information during the entire period. These operating expenses are maintained by accounting districts.

Q. What accounting districts would cover these Fort Smith terminals?

A. All mileage from the Oklahoma State line to Argenta, or Fort Smith crossing at Little Rock, that is the central accounting district, the central division.

Q. These operating expenses would be swallowed up in the expense of about 165 miles?

A. Yes, sir; a hundred and sixty-five miles." (R. p. 858.)

According to Judge Trieber, Oklahoma should share part of the expenses of the Fort Smith terminals, and Arkansas to bear all of Memphis, but as a matter of fact, Arkansas is bearing all of Fort Smith terminal expenses and taxes on the terminal property as well as all of Memphis.

This is wrong. Either Arkansas ought to be relieved of Memphis or Oklahoma share Fort Smith.

It is impossible for the railroads to blow hot and cold on these two border terminals.

The plaintiffs are in the attitude of having large items in their accounts improperly charged—either Fort Smith or Memphis.

In our view it is Memphis, but necessarily one or the other, and for the purposes of this case, it makes no difference which is proper, as one is clearly wrong—both can not stand.

Exhibit 2 shows that the Iron Mountain leases from the St. Louis Southwestern Railway Company, 34.05 miles of track. (R. p. 2291.)

This is called the Paragould trackage in the evidence.

Mr. McPherson thus explains it:

"Taking the most important one of those items you mention, the road from the Missouri State line to Paragould, the railway company found from the enormous volume of traffic between Bald Knob and the State line, that it must make further provision to handle it expeditiously. There were two things that might be done; one was to build a double track and the other to ascertain if the track already existing could not be secured at a reasonable cost, to relieve the situation. And such an arrangement was made.

"No local business is done on that line between Paragould and the State line. It is merely a through line.

"After this arrangement had been completed, it was found as a practical business proposition that it would be better to use it for interstate traffic, and that is the present practice." (R. p. 285.)

It is in evidence from Mr. Hamilton that the rent and expenses of this track for the six months' period is \$36,000 in round numbers.

Mr. McPherson and Mr. Doddridge have said a great deal about the transstate freight using so little of the facilities of the road compared with the intrastate.

If proper to consider that as an element of difference in cost, which they do, how about the other side of the story?

This piece of track is used exclusively for interstate freight traffic. It is claimed to relieve the main line and serve as a double track.

It is admitted by Mr. McPherson that there are steep grades on the main line between the Arkansas State line and St. Louis, and that this leased track furnishes a low grade line from St. Louis and avoids the heavy grades about Gad's Hill and Tip Top, Missouri, and that there is greater efficiency in service of using it and that is one of the reasons, the other to benefit the whole traffic for using this leased line. (R. p. 337.)

The Arkansas interstate traffic can not benefit a farthing by this arrangement and attendant expense.

It was doubtless good management to secure this low grade line and we are not questioning for a moment the wisdom of it, but only the injustice of making Arkansas intrastate bear any part of it when it is used exclusively for interstate freight traffic, a facility in which it does not participate, but in the expenses of which it does.

The facts regarding the Bunch elevator are these, as given by Mr. Johnson: "Q. I see an item in your 'rental account' that has been analyzed showing the buildings and elevator at *The Bunch* Little Rock as leased to Mr. Bunch for \$1.00 per year. *Elevator.* Is that right? A. That is my understanding. That is 'miscellaneous rental account' No. 18. * * *

Q. The Bunch elevator is on the right-of-way, is it not?

A. Yes, sir; I believe it is, and that is the rental for it."

The assessment of it was inquired into, but Mr. Johnson had no information on that subject, and did not know whether it was assessed as outside property (that is property not included with right-of-way, track, etc.), or as part of the right-of-way. (R. p. 207.)

His is the only testimony in the record upon it except that of Mr. R. T. Brooke, as follows:

After stating name, residence, and familiarity with grain elevators and their values:

"Q. Do you know the elevator situated in Little Rock, commonly known as the Bunch Elevator?

A. In Argenta?

Q. Yes.

A. I do; it is a mill and elevator.

Q. Do you know about its value?

A. The value today would be about \$186,000, that is, the mill, elevator and warehouse.

Q. Do you know about its value in 1907, say, the last half of 1907?

A. It is about the same; I don't think there was very much difference in machinery at that time.

Q. Do you know whether that was a public elevator, during the last half of 1907?

A. It was a private elevator.

Q. I wish you would state your opinion of the rental value of that elevator property, taking the entire property?

A. The mill, elevator and warehouse rental value, reasonable rental value, would be about \$20,000 a year.

Q. In 1907, what would it have been?

A. Same thing.

Cross examination by MR. MOORE:

Q. How long have you been engaged in business in Little Rock?

A. About four years and a half, since October 1, 1905.

Q. And where did you do business before you came here?

A. Oklahoma.

Q. What was your business there?

A. Grain business, and interested in a mill; elevator business and mill business.

Q. Did you rent an elevator there?

A. No, I had one of my own.

Q. Did you ever rent one?

A. No, I didn't rent an elevator.

Q. Never rented one as lessor or lessee?

A. No, sir.

Q. Have you any knowledge of the cost of the elevator in Argenta?

A. Only the knowledge which I acquired during a suit which I had against the Iron Mountain, the actual cost as shown in that suit; the cost of that elevator came out in that law suit.

Q. Was it as much as you have estimated the value here?

A. Pretty close to it; let's see; it was \$106,821.76, and there were additions made since that time; a drier was put in, corn drier put in, amounting to about \$50,000 odd dollars." (R. pp. 905, 906.)

Judge Trieber refused to allow credit for the fair rental of the elevator, saying the proof was not sufficient to show that the elevator was the sole property of the railroad company at that time, and that it is not shown whether the dollar a year was paid for the use of the right-of-way upon which it stood or for the elevator itself. (R. p. 2601.)

But he overlooked Mr. Johnson's statement, who referred to the company's rental account which showed "the buildings and elevator at Little Rock leased to Mr. Bunch for one dollar per year;" and said such was the fact as he understood it.

Further, it was shown that it was situated on the right-of-way.

The presumption of title in the railroad would arise from its location on its ground. It was found in this account of rentals submitted to the State for examination.

The matter was opened in this way in an earlier part of Mr. Johnson's testimony.

"Q. Referring to the question of rentals, the St. Louis, Iron Mountain & Southern Railway has a controversy down at Little Rock with the Bunch elevator; I don't care about going into that controversy, but I just want to know whether that elevator property would be included in your rentals?

A. Any rentals we would receive from Mr. Bunch would be included in "rentals." (R. p. 151.)

Mr. Johnson stated that he and the accountants from the State had been analyzing the miscellaneous rental accounts together. (R. p. 182.)

It was after this joint analysis and in reference to it that Mr. Johnson stated that "miscellaneous rental account No. 18" showed the *buildings and elevator* rented for \$1.00 per year.

The Judge refers to another case pending before him wherein the railroad purchased the elevator from Bunch for \$93,665, but states that that fact was not put in evidence in this case. Even this outside evidence in another case is not entirely inconsistent with Mr. Brooke, who testified that in a suit with the Iron Mountain it was proved to have cost \$106,000, and then \$50,000 more added to it, and it might be that Bunch did the latter, and the railroad purchased his interest. But we can not try one law suit on evidence in another.

There is no contradiction of Mr. Brooke's statement that the elevator was a private one and not a public one. Certainly the railroad could not operate a private elevator.

The plaintiffs did not put in any evidence on this subject, and let the situation stand in regard to the elevator as they did as to the Pratt Hotel, another item found in the same miscellaneous rental account, and developed in the same way as the elevator property.

Judge Trieber sustains the State's objection to this item. A hotel, lunch rooms, saloon and other privileges known as Pratt's Hotel, at the station in Little Rock were owned by the railway *Pratt Hotel Rental.* company and maintained by it and leased to Pratt for \$1.00 a year. The evidence showed \$4,200—a fair rental for it. (Opinion, p. 2600.)

Judge Trieber also sustained the State's objection to not receiving a share of the express company's dividends. The express company *Express Company Dividends.* gave the Missouri Pacific 40 per cent of its capital stock for the exclusive privilege of doing the express business on its lines. The Missouri Pacific owns all the stock of the Iron Mountain and put this express company on the Iron Mountain lines as part of

its system under this contract. The Missouri Pacific has for 20 years regularly drawn \$144,000 a year from the dividends on this stock, and not a penny has gone to the Iron Mountain.

Judge Trieber held that a proportion should be credited the Iron Mountain earnings for the six months period, amounting to \$15,984. (R. p. 2599, 2600.)

This is clearly right, but what becomes of the \$15,984 which should have been paid for the last 20 years? A sum of over \$300,000 has been withheld from the Arkansas earnings of the Iron Mountain under this decision, and it is confidently submitted that no other decision can be rightly reached on the facts. This sum would help out in lean years for which a surplus ought to be provided. Merely giving credit for \$15,984 for a six months' period does not square this account. It ought to be treated as surplus or in some other way do equity to the Arkansas business. A fine of \$10,000 was imposed on the Iron Mountain.

Here are all the facts, elicited from books of the company, and proved by Mr. Johnson: "Q. In the month of November, 1907, I find that you have paid judgments, in the case of the *The Fine of State of Arkansas v. the St. Louis, Iron Mountain & Southern Railway* in fines, for a violation of the law against furnishing free transportation to Legislators, of something over \$10,000—or, \$10,000 plus the court costs; that is correct, isn't it?

A. Yes, sir.

Q. That was for a violation of the statutes, to which the railroad company pleaded guilty, wasn't it?

A. Yes, sir; that is the way the account reads." (R. p. 184.)

This is the only other reference to it:

"Q. Mr. Johnson, there was one question I should have asked you before and I forgot it.

Do you think that fine of \$10,000.00 in those cases of violating the law is a proper charge against operating expenses?

A. I don't know where else it would go. It is an incidental expense and I know of no other place you could put it.

Q. Do you think that is an operating expense?

A. It is an expense that is undoubtedly incurred in the operation of the railroad. You can not charge it to "capital account" and I don't know where else you would put it.

Q. Ought not it be charged against surplus or profit and loss account?

A. I hardly think so.

Q. Your judgment as an accountant would be that a fine against a railroad for violating the law should properly go into operating expenses?

A. Yes, sir." (R. p. 199.)

Mr. Justice Brewer, speaking for this Court, said:

"Surely, before the courts are called upon to adjudge an act of the Legislature fixing the maximum passenger rates for railroad companies to be unconstitutional, on the ground that its enforcement would prevent the stockholders from receiving any dividends on their investments, or the bondholders any interest on their loans, they should be fully advised as to what is done with the receipts and earnings of the company; for if so advised, it might clearly appear that a prudent and honest management would, within the rates prescribed, secure to the bondholders their interest, and to the stockholders reasonable dividends. While the protection of vested rights of property is a supreme duty of the courts, it has not come to this, that the legislative power rests subservient to the discretion of any railroad corporation which may, by exorbitant and unreasonable salaries, or in some other improper way, transfer its earnings into what it is pleased to call 'operating expenses.'"

Chicago, etc., Ry. Co. v. Wellman, 143 U. S. 345.

Is not this an "improper way" in which the earnings of the railroad company have been transferred to "operating expenses" within the meaning of that opinion?

Judge Trieber says the evidence fails to show whether the free passes were given to members of the Legislature with the knowledge and approval of the higher officials of the company, or by some inferior officials for whose conduct the company would be liable.

But the burden rested on the plaintiffs to show that the higher officials did not know of it—if that makes a difference.

Passes can only be issued by an officer clothed by the company with that power. If he violates the laws of the land in the performance of his duties, and in furtherance of the purposes of his principal, his principal is bound.

The plea of guilty fixes the responsibility of issuing free passes on responsible shoulders.

The State contended that salaries paid W. H. Phelps and J. M. Seibert in Missouri, parts of which were distributed against the Iron

Salaries To Lobbyists. Mountain in Arkansas and T. L. Cox in Arkansas were not proved to be legitimate expenses. Seibert was carried on the rolls as "commissioner of statistics," and witness after witness connected with the road, was asked what statistics he kept, and none knew. None of the vast array of statistics produced in this case emanated from the "commissioner of statistics," none of these gentlemen compiling the statistics ever obtained statistics from him or knew his duties. (R. p. 425.)

He was paid \$250 per month, of which \$110.33 was charged to Arkansas.

W. H. Phelps was carried as assistant to the vice president at a salary of \$500 a month, of which \$128.22 was charged to Arkansas.

T. L. Cox was paid "for services rendered to the law department," the sum of \$200 per month. (R. pp. 184, 185.)

It is true, as stated by Judge Trieber (R. p. 2602), that the State failed to prove these salaries were paid to these parties as lobbyists. The lack of duties of a "commissioner of statistics" in a case involving the statistics of his road for years; the absolute lack of knowledge of the assistant to the general manager and other officials of the road of his duties and of the statistics compiled by him was certainly sufficient to require the railroad to explain this item and especially why any part of it should be charged to Arkansas. No one questioned could account for the services rendered by Phelps to the Iron Mountain in Arkansas.

No evidence was necessary in regard to Thos. L. Cox. He is part of the history of Arkansas, of which all courts may take cognizance. " 'Tis true, 'tis pity; and pity 'tis, 'tis true."

A graphic sketch of him and "his services rendered to the law department" is found in *Butt v. State*, 81 Ark. p. 17, and another chapter is found in *State v. DuLaney*, 87 Ark. p. 17.

These were prosecutions of legislators for bribery.

Another instance of improvident contract is the one with the Frisco road, just referred to, for use of the bridge between Van Buren and Fort Smith. It saves four miles of distance, and is used by one passenger daily each way. *The Van Buren Bridge.* Exhibit 46 shows these trains are "slow trains in

Arkansas," stopping every five miles. Hence, the saving of four miles is not an economy in a slow train. There is no excuse of congested traffic or the need of a double track, for Mr. McPherson testifies that from Van Buren to the junction by which all the other traffic moves there are 34 movements including a switch movement in 24 hours. (R. p. 412.)

For running these two trains per day, a rent is paid so much for each car and each engine with a minimum payment of \$1,000 per month. This luxury of two slow trains using this bridge instead of the company's own track costs \$12,000 a year. It is not strange that the ratio of expenses is so high.

In Group 8, the average cost is \$64.34 for every \$100 revenue. On the Iron Mountain in Arkansas, \$74.24 for every \$100 of revenue. (R. p. 139.)

Exhibit 3, statement 4 (R. p. 2303, 2304), shows division of operating expenses between Arkansas and the rest of the Iron Mountain road. The track-mileage is 52 per cent in Arkansas, and the average of the expenses apportioned to Arkansas is 55 per cent maintenance of equipment. Many of these items will vary from month to month and year to year and generally, the plan adopted is fair, as a heavier expense of one month in Arkansas will be compensated next month in Missouri, but where there are local conditions pre-

venting this, then it is unfair, and that is manifestly true of item 40.

"Tools and machinery, repairs of—total \$63,288.35; amount chargeable to Arkansas, \$48,671.67—77 per cent."

Mr. Johnson thus explains it:

"A. This account for repairs to tools and shop machinery and heating and lighting, are charged to an operating division, or, rather, they are charged to the jurisdiction of each master mechanic. In Arkansas, of course, our principal master mechanic is at Little Rock, which perhaps entails a heavier expense than it does at any other division point.

Q. Why?

A. Because it is larger than any other division point.

Q. Why?

A. Because it is larger than any other division point on the St. Louis, Iron Mountain & Southern Railway.

Q. Aren't those shop expenses apportioned over the entire Missouri Pacific system?

A. No, sir; not miscellaneous shop expenses, such as that item.

Q. What shop expenses are apportioned over the entire system?

A. The repair account is apportioned over the entire system. But the repairs to tools and shop machinery are localized to the particular division.

Q. Isn't this a repair account?

A. When I speak of a repair account I mean cost of repairing equipment, such as locomotives and cars.

Q. Why do you make a distinction between repairing those cars and locomotives and repairing the tools and shop machinery?

A. The only reason that I can give for that is that we have never thought it proper to pool the miscellaneous shop accounts. We localized them to the division where they occurred. If we pooled them perhaps Arkansas would be compelled to stand a proportion of the other shop accounts.

Q. It does stand that on repairs to cars and locomotives?

A. Yes, sir.

Q. Well, then, why should not it also stand it on repairs to tools and shop machinery?

A. The only reason is that the amount is too small to handle that way.

Q. It is a pretty considerable item here. I see it is \$63,000.00.

A. Yes, out of one million dollars.

Q. That grows out of the Baring Cross shops?

A. The \$48,000.00 does, yes.

Q. I believe this is \$63,000.00.

A. It is \$63,000.00 on the St. Louis, Iron Mountain & Southern Railway.

Q. And \$48,000.00 on the Baring Cross shops, which runs up the percentage for Arkansas to 77.

A. Yes, sir.

Q. Does that uniformly run that high, assigning that account to Arkansas?

A. You mean the proportion chargeable to Arkansas?

Q. Yes.

A. I would say that is a normal amount. I do not believe it fluctuates to any great extent, and the basis for apportioning it has always been the same. Whatever the charge is on the St. Louis, Iron Mountain & Southern Railway, proportionately 77 per cent would be charged to Arkansas." (R. pp. 141, 142.)

Owing to the location of the master mechanic in Little Rock and the Baring Cross shops there, the company localizes this item of expense current to the entire Missouri Pacific system instead of apportioning it as all other items are apportioned throughout the system on the car-mile basis. The only reason assigned is that it has never been done.

It is fair to assume that if this item had been distributed as the others, Arkansas would not have had to have stood more than the average, 55 per cent. In fact, this 77 per cent lifts the average above what it should be.

Charging Arkansas with 55 per cent instead of 77 per cent would make a difference of \$13,863 for the six months or an annual difference of \$27,726, and this going on for years—another reason that the operating ratio is overhigh.

The St. Louis Southwestern Railway does not pursue this course in their exhibit, and distribute fairly this item.

There are other items questioned, like paying lawyers in Texas for law suits there, and distributing parts of it over the intrastate traffic in Arkansas (R. p. 182, 183), but they are small, and we will not burden this discussion with further detail.

Summarizing: We submit, that the account of the railroads should be purged of this \$13,863 excess expense erroneously charged the State, and a good part if not all the \$12,000 per annum improvidently paid the Frisco road, and \$2,631 paid Cox, Phelps and the "commissioner of statistics," and the \$10,000 fine for violating the criminal laws in giving free passes to members of the Legislature, and the \$36,000 paid for the Paragould track, exclusively devoted to interstate service, a total of \$58,631 for the six months' period, and in addition the large expenses of the Memphis terminal and of the legal and other departments of that road in Tennessee, the amount of which is not shown; on the other hand, they should be charged with the Pratt Hotel reasonable rental, \$2,100 for six months, and of the Bunch elevator, \$10,000 for the six months, and the Pacific Express Company dividends, \$15,984 for the six months, \$28,084, a difference of \$86,715 from the account as it now stands, and with the exclusion of the Memphis expenses, it would doubtless make a difference of near, if not quite, \$200,000.

THE TEST MONTHS.

We have assumed in some preceding discussion the accuracy and reliability of using the statistics of the two test months—both put in evidence by the plaintiffs—and will now proceed to prove, principally by the plaintiffs' witnesses, reinforced by undisputed statistics, that they are a fair test of the six months' period on which the plaintiffs seek to try their cases.

We do not concede that a six-months period is a fair test of the operation of rates, especially this six months where the panic of 1907 began to be felt in the revenues of the roads, at least in November. But that is another subject; our text is now, if the six-months period fairly represents the business of a series of years demonstrating the effect of a system of rates, that the test months fairly represent the period in detail. The final stand of the plaintiffs amounted to saying that at large the six months represents a series of years, but the test months do not represent the details of the six months.

In their case in chief their position was that six months fairly represent conditions for a series of years and the test months represented the six months in detail, especially as to the respective movements, revenue and expenses of interstate and intrastate traffic. But when these months' statistics destroyed their carefully built-up theory of extra cost, and the facts in them at war with the alleged facts upon which the extra cost theory was based, they bring on another set of witnesses to impugn their force and the later witnesses combat their own testimony in chief.

Before the later developments, however, their witnesses in chief had used the statistics of the test months upon which to bottom their arguments and point their moral and adorn their tale.

We contend that even if the later witnesses are correct that the plaintiffs are morally and equitably estopped to question the force of the test month's statistics. We have pointed out many reasons, independent of any consideration of these test months, why the plaintiffs have failed to make their case; and, independent of all other reasons, if the result of either of these test months is accepted as representative of the interstate and intrastate traffic, the plaintiffs by it alone fail. In the St. Louis Southwestern Railroad (commonly called the Cotton Belt) test the load of the local train is 68 per cent interstate and on the Iron Mountain 72 per cent. With the much greater cost of the local freight train assigned 68 per cent or 72 per cent to the interstate traffic, instead of it being the vehicle for intrastate traffic almost exclusively as the plaintiffs' witnesses would have it, the claim of 100 and more per cent of extra cost is destroyed. Charge all the extra terminals to the State that they seek, disregarding the extra interstate terminal handling of cotton, grain and lumber, as well as the Fort Smith and Memphis double interstate handlings, and with the 98.18 per cent extra intrastate revenue on the one railroad, 141 per cent on the other, per ton per

mile, all extra cost is absorbed. If the Iron Mountain test of 61 per cent of the intrastate freight on the through train is accepted it is apparent that the intrastate traffic is the cheaper, and if the 22 per cent of intrastate freight of the Southwestern on through train is accepted, their higher revenue of 141 per cent per ton per mile will equalize, if not overcome, all other items of extra cost where the interstate is bearing 68 per cent of the expenses of the local train.

The importance of this subject is great for two reasons—first, the one given—the destruction of the plaintiffs' claim of extra cost based on opinion evidence radically at variance with these facts; and, secondly, they are used as the basis of the State's plan of dividing expense.

The plan if found sound—even if the statistics are not—should of itself be a destruction of the plaintiffs' case, as proving that by proper tests and detail their expenses can be properly allocated and not left to arbitrary bases, supported by opinion evidence solely; and if the statistics are correct, the extra cost is demonstrated, even after using the revenue basis to apportion the property and the train mile to apportion common expenses between freight and passenger—to be less than the higher intrastate revenue for the same service performed. These months are not used for the passenger traffic. In truth, two facts destroyed any appreciable claim for extra cost on passenger traffic: (1) That all the St. Louis Southwestern Railway trains were local, and all except eight of the Iron Mountain's were local; and (2) that the two terminal expenses in and out of Memphis and Fort Smith charged to interstate and the system of transferring interstate passengers at Little Rock and other junction points, put as much or more terminal handling and casualty risks in getting on and getting off trains by the interstate as by the intrastate. Hence, the passenger side may be dismissed and attention solely directed to the freight where the extravagant claims of extra cost are attributed, especially as Judge Trieber found no extra passenger cost on one road and only 10 per cent on the other.

At the expense of tediousness, but not thoroughness, we will put before you fully the evidence as to the test months.

Mr. R. E. Kimbell, Assistant Auditor of the St. Louis Southwestern Railway Company, introduced the exhibits of his road upon

The St. L. S. W. Railway Test Month. which it sought to make out its case. After introducing the exhibits of revenue, operating expenses, division of expenses, etc., on his direct examination in chief, this testimony was given:

"Q. Mr. Kimbell, did the operating officers of the St. Louis Southwestern Railway Company make a test at any time after this litigation was instituted, for the purpose of ascertaining the relative cost of conducting State and interstate transportation? If so, I wish you would state what was done in that respect.

A. A test of that kind was made under my direction.

Q. What period did it cover?

A. The month of October, 1908. The temporary injunction was granted in St. Paul on September 3, and the month of October was selected for the purpose of this test, on account of it being the first full month following the injunction. October is rather a heavy month, but for a test of this kind, in my judgment, it fairly represents the general conditions.

Q. Would it represent, fairly, a year's business?

A. I should say so. It would represent relatively the difference between the two classes of traffic.

Q. I wish you would describe in what way that test was made.

A. We employed special men to ride on every local freight train running in the State of Arkansas, during the month of October; and also stationed men at terminal points; all of these men being provided with special forms on which they were required to make an abstract showing way-bill, reference points from and to, and weight of all freight handled on their train. These reports were accumulated in our Superintendent's office by a representative stationed there, and sent to my office, where the ton miles and other data required, was figured out.

Q. Did they also obtain the weight of the car?

A. They also obtained the tare weight of all cars, loaded and empty; cabooses; gross weight of locomotives in each train. The fuel consumed on each run was reported by each engineer, which was the way we figured it could be most accurately obtained.

Q. Was there any record kept of the cost of labor?

A. The wages of train and engine men were obtained from the time slips of each train, and therefore are very accurate.

Q. All the various elements, then, that entered into the cost of moving freight on those trains was ascertained, was it?

A. I think it was; yes.

Q. Have you prepared any statement showing the result of that test?

A. Yes, sir.

Q. If you have, I would be glad to have you file such statement as you have, as exhibit 19.

The paper referred to is marked "R. E. Kimbell, Exhibit 19."

Said paper is in the words and figures following, towit:

For exhibit 19 (R. p. 2375).

Q. Have you prepared any additional statement of statistics that have a bearing upon the information obtained in that test?

A. I have prepared a statement of miscellaneous statistics, in connection with that, which I file as exhibit 20.

The paper referred to is marked "R. E. Kimbell, Exhibit 20."

Said paper is in the words and figures following, towit:

For exhibit 20 (R. p. 2377).

Q. Did that test enable you to ascertain, with exactness, the commercial ton miles made by the different trains, the through and local trains?

A. Yes, sir; it did.

Q. And did it give you also the ton miles of dead weight, including the locomotive and caboose, and all cars, including empties, on all trains?

A. It did.

Q. Did it enable you to determine with exactness the cost, wages and fuel?

A. Yes, sir.

Q. Mr. Kimbell, I wish you would state what result was shown. State it in your own language." (R. pp. 156, 157.)

Then Mr. Kimbell summed up, in his testimony, the statistics given in full in exhibits 19 and 20.

He concluded his statement regarding it as follows:

"Q. Was that test made with care and caution, and are you satisfied that the information as obtained was correct and accurate?

A. It was made under my personal direction and every possible care was taken to have it correct." (R. p. 159.)

In cross examination it was shown that the conclusions drawn by Mr. Kimbell in his preceding testimony were made by applying the revenue basis to the actual conditions found in his test; while that affected the conclusions reached, it did not reflect upon or question the actual results obtained and shown in exhibits 19 and 20. (R. p. 159.)

On cross examination, after explaining that the test was made of October, 1908, and not of the passenger traffic, but of the freight alone, and while the Commission Tariff was in force, this testimony was given:

"Q. Then on your freight test, it was all under the Commission Tariff?

A. Yes, sir.

Q. Do you think that one month would fairly represent the business of your line for a year?

A. I think for the purpose of a test of that kind, determining the relative difference between the two classes of freight, that one month is perhaps as good as another.

Q. Why did you select October?

A. As explained, it was the first full month after Judge Van Deventer granted the injunction. He granted it in September, September 3; we wanted to make this test as soon as possible, so we selected the first full month.

Q. In your judgment, a test of this kind, made for the month of October, would fairly represent the operation for a year, or for a series of years?

A. I should say so.

Q. Well, do you think that would be affected by the fact that this was after the panic, when the normal condition of affairs was not fairly resumed?

A. I don't understand that the month of October was after the panic.

Q. That was when the panic began.

A. Right along in there we began to feel it.

Q. This was the year after the panic begun.

A. Exactly.

Q. Well, do you think that matters had fairly resumed themselves, so that you could make a fair test of that year?

A. I think so. I believe that under almost any conditions, good times or bad, the relative difference between the two classes of freight would travel uniformly. In other words, if we have poor business, it is going to affect both classes of traffic.

Q. And you think that any one month completely worked up, would fairly represent those conditions?

A. I do; yes, sir." (R. p. 163.)

On re-direct examination this was said relating to the panic and when it was felt:

"Q. Mr. Kimbell, when did the panic of 1907-8 begin to have its effect on the railroads?

A. I should say in November, 1907.

Q. Well, when did the effect of the panic—when was it fully felt by the railroads?

A. It began to be felt during the month of November, and I should say it increased in its intensity from month to month and was felt very severely in February or March.

Q. Was it not at its height in the spring, in March?

A. I think so.

Q. It began, then, in November?

A. Yes, sir.

Q. Is it true that the effect of it was felt severely in November, or did it come on later, the severity of it?

A. I can only testify from memory of the situation, and not from—

Q. I want your best impression in regard to that; whether it was felt severely in November, or began to be felt in the spring.

A. My impression is that it did not begin to be seriously felt until the early part of 1908.

Q. The reason I ask you is, Judge Hill asked you if it was severely felt in November, and you stated it was, and I wanted to know, whether you understood his question.

A. I expect I should have qualified that, because I think that is where it commenced, in November.

Q. And it became severely felt and was perhaps at its height later on, in the spring of the next year?

A. Yes, sir." (R. pp. 168, 169.)

In cross examination Mr. Kimbell had been presented with an annual report of his road, showing that, beginning with November, 1907, the volume of traffic decreased and the gain previously made had been lost. (R. p. 161.) Evidently to show the six-months' period was normal, he put in the gross earnings for each six months for four years, and he also gives comparative monthly earnings for several years. (R. pp. 169, 170.) The trend of this testimony was to prove the six-months period normal and one month fairly representative of the whole. We will not burden the discussion with the statistics given.

To further reinforce the test, this was brought out in Mr. Kimbell's re-direct by the plaintiffs' counsel:

"Q. Mr. Kimbell, speaking of the test you made for October, 1908, did I understand you to state that that test was based upon an ascertainment of the relative cost in the various percentages of service that was involved in transacting the two classes of business—that is, it was intrastate and interstate?

A. That is freight only.

Q. I said nothing about passenger. I say the two classes of business, interstate and intrastate freight.

A. Yes, sir.

Q. That, then, developed the actual expenses of each one and therefore the relative expense as between them?

A. I think so.

Q. Now, would the ratio be affected or changed, by a change in the prosperity of the business of the road; would it depend upon whether the business was light or whether it was large?

A. I would say that the relative proportion of State and interstate traffic would travel uniformly, whether business was up or down." (R. p. 171.)

After the change of base by the plaintiffs in their attitude to the test movements, it is gratifying to read Mr. Kimbell's testimony, given at the close of the plaintiffs' case in rebuttal.

As will be seen in reading the evidence, whenever the plaintiffs put on a witness to impeach the reliability of the October tests, the State read him these excerpts from Mr. Kimbell and called for a statement as to his agreement therewith. After this, Mr. Kimbell thus epitomized his testimony previously given:

"Q. Counsel for the State has called your attention to a statement made in your evidence to the effect that October, 1908, the month in which a test was made on your line, would represent relatively the difference between interstate and intrastate traffic: You recall the reference to this which counsel made? Do you wish to make any statement in connection with that?

A. The testimony I gave in direct and cross examination concerning the test made on this road in 1908 has been frequently quoted

by the State in connection with its action in using the figures for October, 1908, in apportioning expenses for a six months' period.

I do not know whether I have been misunderstood in this matter or not, but I would like to make my position plain.

This test was made for the purpose of determining the cost of the labor and fuel on local and through trains and the relative handling of State and interstate business on each class of train.

As I stated in my direct and also on cross examination, it was a very laborious task to make this test, and to cover a period of more than one month would be almost prohibitive, on account of the labor and expense required to do the work.

I testified in direct examination that so far as this test was concerned, it would represent relatively the difference between the two classes of traffic. I also testified on cross examination that I thought for the purpose of a test of that kind, to determine the relative difference between the two classes of freight, one month was perhaps as good as another. And that under almost any conditions, good times or bad times, the relative difference between the two classes of freight would travel uniformly. In other words, if we are going to have poor business it is going to affect both classes of traffic.

I did not intend to convey the impression, nor do I think the testimony indicates that I did, that the month of October or any other month would fairly represent the character and volume of business for the period of six months or a year.

One month may reasonably be taken as a guide in determining the relative amount of State and interstate freight handled by the two classes of trains. And for that purpose it would seem, perhaps, that one month is as good as another.

The results of this test are embraced in exhibits 19 and 20, as illustrating the relative cost per ton per mile, intrastate and interstate, for wages and fuel, and are not used in any of the other computations included in other exhibits filed by this company.

Q. You ascertained the actual amount of freight carried on each class of train?

A. Yes, sir.

Q. You did not arrive at the tonnage hauled by the through trains in the manner used in the exhibits prepared by the State?

A. This test was the actual tonnage handled on both classes of trains, local and through, from the first day of the month to the last, irrespective of the dates of the waybills." (R. pp. 2081, 2082.)

The State used it in its exhibits for the actual facts as to results found by him as to these items of expenses, applying them to the intrastate and interstate in the relation actually found by him carried on the local and through trains respectively. It was used for the exact purpose he here repeats it was useful for; the relation of the two classes of traffic on the two classes of trains; and that relation as found destroyed the theories about it.

Mr. W. B. Doddridge had been General Manager of both of these plaintiff roads. (R. p. 452.) He was employed as an expert by the Missouri Pacific Railway in the Missouri Rate Case. In that case he attended the sessions and consulted with the witnesses, and in that case and in this case he acted, so he testified, in an advisory capacity to the counsel for the railroads. (R. pp. 466, 467.)

In direct examination he was asked if he had knowledge of the test on the St. Louis Southwestern Railway "for the purpose of ascertaining the difference in the cost of conducting the two kinds of traffic under consideration," and said that he had. (R. p. 459.)

Then he quotes at length the statistics shown and draws similar deductions, using the revenue basis applied to actual results to work out extra cost. (See cross examination, where he admits that both he and Mr. Kimbell used the revenue per ton per mile even after he got the actual facts to make their calculations of extra cost. (R. p. 508.)

In cross examination this occurred:

"Q. You say you made a test on the Cotton Belt—in October, 1908, was it?

- A. The Cotton Belt Company made a test.
- Q. Under your direction?
- A. Well, no; under Mr. Kimbell's direction.
- Q. You had a hand in it, didn't you?
- A. Yes, sir; I had something to do with it; I wanted the test made.

MR. MOORE:

Q. What did you have to do with it?

A. I say, I simply wanted it made to determine—

Q. You mean you suggested it?

A. Yes.

MR. HILL:

Q. Do you think the test of one month's operation would be fairly representative of the entire year?

A. I think in this case that it would be representative as to the relative proportions of the different kinds of business, for the reason that the month of October, 1908, was one of the heaviest months of the year, and considerably above the average twelve months, probably.

The main purpose in making this test was to determine the average relation that one class of business bore to the other, and if the business of the road was lighter in a subsequent month, the chances would be more than likely in favor that the relative proportions would remain pretty near the same." (R. p. 476.)

Mr. Doddridge uses the statistics of these two exhibits fully and in detail, working up to his extra cost of intrastate freight. (R. pp. 459-461.)

The Iron Mountain
Test Month.

The Iron Mountain exhibit 26 was thus brought into evidence by the plaintiffs in their case in chief: Hubert Roth, recalled, testified as follows: Direct examination. Q. I hand you a paper which is marked "statement of transstate, interstate and intrastate freight, handled during the month of October, 1907?"

Was that statement compiled by you, or under your directions?

A. Yes, sir.

Q. And is it a correct statement of the operations represented on the statement, during that period?

A. Yes, sir; I think it is as correct as figures of that kind can possibly be. It is correct with the exception of possibly clerical errors.

Q. Will you file that statement as exhibit 26 to your testimony?

A. Yes, sir.

The paper referred to is marked "Hubert Roth, Exhibit 26." Said exhibit is in the words and figures following, towit: For exhibit 26 (R. p. 2391).

CROSS EXAMINATION.

"Q. You compiled this statement yourself?

A. It was compiled under my direction.

Q. Will you vouch for it as being absolutely correct?

A. No, sir. It is reasonably correct.

Q. What do you mean by that?

A. I mean that I can not vouch for clerical errors. Every care was taken to have those figures correct.

Q. Did you have a competent force under you?

A. Yes, sir; I had a competent force, men accustomed to that class of work.

Q. And you gave that work your careful, personal supervision?

A. Yes, sir.

Q. You are thoroughly satisfied it is correct?

A. I am satisfied it is correct.

Q. In every particular?

A. Yes, sir." (R. p. 279.)

As will be seen hereafter, the statistics in exhibit 26 were repeatedly used by plaintiffs' witnesses throughout the case in chief and the first time, so the record shows, that any question of their force was raised was in the cross examination of Frank E. Ward, when the history of this exhibit was thus given:

"Q. The statistics on the Iron Mountain Railway were put in by the Iron Mountain, but I do not believe they had been analyzed as between local and through, as they were on the Cotton Belt:

The State's accountants have analyzed them substantially as was done with the Cotton Belt statistics.

MR. MOORE (the plaintiffs' counsel) : The statistics contained in exhibit 26 in this case, to which counsel refers, which gives the total amount of State and interstate tonnage taken in the Auditor's accounts from the waybills, was prepared at the request of the State's counsel in a conference held in the Judge's chambers during the progress of this case.

I state this in order that there may be no misunderstanding as to how that came into the record.

JUDGE HILL (the State's counsel) : I did not so understand that. I remember it was given to us as the result of such a conference, but I understood it had already been prepared by the railroads and certainly the State's counsel did not ask for it to be introduced. Isn't that correct, Mr. Johnson?

MR. MOORE : Some of the data was prepared, but that data was prepared as the result of a conference in Judge Trieber's chambers.

MR. JOHNSON (the accountant of the Iron Mountain) : In the Missouri case such a statement as that was called for by the railroads and it was our understanding that it would be required in the Arkansas case; and we worked it up for that purpose.

In Judge Trieber's chamber, at a conference between yourself and Colonel Moore, when Mr. Wharton was present, Mr. Wharton asked for three months of these figures and we told him we had prepared them for one month for his convenience and did not feel we should be called upon to prepare them for three months. Judge Trieber then said we should not be required to prepare those figures.

Mr. Wharton finally agreed that the figures for one month would answer the purpose.

For our own purpose, in presenting this case, we would have no use for that exhibit. We believed that rather than check over the State exhibit it would be better for us to work that up ourselves, because it took us a considerable time to check their statement in the Missouri case.

JUDGE HILL : You did prepare these and had them prepared before Mr. Wharton ever requested them, did you not?

MR. JOHNSON : That is right.

JUDGE HILL : And you introduced them yourself, and not at our request?

MR. JOHNSON : Only to this extent: that it was the statement compiled for this case and if we had not introduced it we felt you would call for it, just as was done in the Cotton Belt case.

JUDGE HILL : But we did not call for them?

MR. JOHNSON : It was not necessary, because we had filed it. And in the meantime we had turned over a copy to the State expert." (R. pp. 1878, 1879.)

In the cross examination of Carl R. Gray, a witness for the plaintiffs in rebuttal, the above history of the preparation of exhibit 26 was repeated and this evidence added:

"Q. You took it as typical?

MR. JOHNSON: We took it for one month, because we could not work up any more, and we took October because it was the largest business of that period.

JUDGE HILL: You took it as a typical month?

MR. JOHNSON: We took it as representing the largest movement of freight.

I want to say that the freight in that exhibit is not freight handled on the trains. It is made up by the auditor from the auditor's accounts. The only purpose that that statement was used for by our witnesses was to show the relative proportion of the transstate, State and interstate freight carried into the accounts.

JUDGE HILL: And the length of the haul?

MR. JOHNSON: And the length of haul.

JUDGE HILL: State and interstate?

MR. JOHNSON: Of each class.

JUDGE HILL: Now, Mr. Johnson, you selected that month of October to work up these statistics, did you not?

MR. JOHNSON: Yes, sir.

JUDGE HILL: And when the State asked you for a three months' statement you said you were not willing to work that up, but you had the figures for one month already worked up, which you were willing to give them?

MR. JOHNSON: I said in Judge Trieber's office that we had those figures worked up in anticipation of their request, which we would give them and preferred to give them that, rather than check up figures which they might make.

JUDGE HILL: You were asked at that time whether that one month was fairly representative of the six months' period?

MR. JOHNSON: I said it was, so far as volume of business and the revenue was concerned.

JUDGE HILL: Didn't you say it was fairly representative of the six months?

MR. JOHNSON: So far as volume of business handled and the revenue." (R. pp. 1929, 1930.)

During the examination by the State of Mr. Swaim, rate clerk of the Commission, a question of statistics came up, and, as frequently happened, Mr. Johnson, the Iron Mountain accountant, was called up to furnish the information, and his view of October, 1907, as a representative month was thus shown:

"Q. This is an L. C. L. movement; do you know what the percentage of L. C. L. intrastate movement is to the entire movement?

A. No, sir; I do not; I have heard it variously estimated. I think it is a very small part of the carload.

Q. Mr. Johnson, do you remember the statistics of your road, as to the percentage of the L. C. L. movement?

A. Yes; I remember it for one month, October, 1907, which I consider a fairly representative month, of the total movement, and it is $4\frac{1}{2}$ per cent, but I do not know that it is an exact apportionment between carload and less than carload.)" (R. p. 774.)

Up to the point where Mr. Wharton introduced the State's exhibit, using the test months as the basis to work up a division of expenses between local and through trains, and consequently interstate and intrastate, there seemed, from no side, any question but what these statistics in every detail fairly represented the six months' period.

Shortly before Mr. Wharton introduced the exhibits the counsel for plaintiffs, in cross examining Mr. Lincoln, gave him the statistics of exhibit 26, and asked him, with that as a basis, what proportion of the entire interstate business would be conducted on through trains rather than local. (R. p. 967.)

The statistics found therein were constantly used as showing the conditions indicated by the statistics quoted, and it would be too tedious to follow it in detail. To illustrate: Exhibit 26 furnishes the only separation of traffic into transstate, interstate and intrastate. It shows that the transstate is 51.16 per cent of the ton miles of all the traffic and 33.61 of the tons. Mr. McPherson's argument of extra cost of interstate was largely predicated on the fact that 51.16 per cent of the whole traffic was transstate, which had "straightaway movement" through the State, utilizing fewer of the facilities of the railroad, less labor and less station force. He draws comparsons between the classes of traffic, comparative expense and economy of each, assuming throughout the proportions found in exhibit 26, from which he freely quoted in this argument. (R. pp. 321-323.)

Mr. Doddridge uses the same table to show the volume of traffic which "is transported across the State, as upon a bridge." (R. pp. 457, 458.) He also uses them to show proportion of traffic on local train. (R. p. 458.)

Mr. McPherson also used these statistics as to the transstate traffic taken from exhibit 26 in his argument against the ton-mile basis of dividing expenses. (R. pp. 316, 317.)

In discussing the extra cost of intrastate transportation from a physical standpoint, Mr. McPherson again uses exhibit 26 as giving percentages of the relative classes of traffic. (R. p. 307). And again in the same connection he appealed to exhibit 26, at page 441, to illustrate his argument.

In cross examination he uses the statistics in exhibit 26 as to length of transstate haul with which to confound the State. (R. p. 448.)

Exhibits 26 and 19 (the test months) are the only exhibits which separate carload and less than carload freight, and throughout the

course of the evidence the relative C. L. and L. C. L. freight, intra-state and interstate, was referred to as affecting extra cost.

Another act of acceptance of the statistics of these months and their representative character is found in questions by the State's counsel to plaintiffs' witnesses, which were not challenged. To illustrate:

The tonnage of intrastate and interstate freight on local and through trains, as found in exhibit 19, was given to Mr. Ward with this statement:

"And it is in the testimony by the railroad witnesses that that month would fairly represent the business of that company." (R. p. 731.)

The statistics in exhibit 26, as to L. C. L., State and interstate, was also given him with the statement it was "a month which they (the plaintiffs') took as representing their traffic" (R. p. 736), and he was fully cross examined on these unchallenged statements of the plaintiffs' position, that these statistics fairly represented the condition of these roads; and in re-direct was further examined upon them. (R. pp. 737-8.) In truth, the record shows their constant use by both sides (to illustrate, see page 583), without question as representing undisputed facts during both the plaintiffs' case in chief and defendants' case in chief. The question of their representative character and value was first raised in plaintiffs' rebuttal. For that reason it is apparent why, in their case, the defendants had no evidence on the subject; they were no more questioned than the maps of the roads were questioned. Before proceeding to the attack upon them, some further testimony of plaintiffs' witnesses have a bearing on this issue:

Mr. McPherson gave this testimony in direct examination of the plaintiffs' case in chief:

"Q. Mr. McPherson, from an operating standpoint, what do you think of the year 1907 as a representative period for the purpose

Plaintiffs' Evidence of Normality of Period. of testing and determining the reasonableness or unreasonableness of the rates that are in controversy in this case? A. In my

opinion the year 1907 was a fairly representative year. Q. You have spoken in your previous examination of certain increases in the cost of labor and material in and during the year 1907; did those increases in any way affect that period as a representative period for the purpose of testing the rates referred to?

A. Not in the ratio of the increase they represent because they will continue in the future. They are permanent in their character and would affect in the same way the operation of subsequent years.

Q. Did those increases change in any way the relation as between the rates or the earnings of the property during the year 1907 in your judgment?

A. I do not understand your question.

Q. Did the increase in the cost of labor and material which occurred in 1907 affect the relation as between the conduct or the cost of the interstate and intrastate traffic?

A. They are burdens on the whole traffic.

Q. Did they affect all of the traffic alike?

A. They would affect all of the traffic alike.

Q. When did the panic of 1907 first begin to be felt in the operating department of the railroad?

A. The operating department felt it in December of 1907.

Q. When did it reach its height in its effect upon the operation of the Iron Mountain railroad?

A. In the following summer I should say, from April to June it reached the high water mark of effect.

Q. How long did the conditions brought about by the panic continue?

A. Well, they continued all through the fiscal year of 1909." (R. p. 332.)

Mr. Johnson gave this testimony on cross examination during plaintiffs' case in chief:

"Q. Do you consider the last half of 1907, especially in view of the question you have just answered, to be a fair and normal test of operations on the St. Louis, Iron Mountain & Southern Railway in Arkansas?

A. I do, under the two-cent rate.

Q. I am asking more broadly than that. I am asking you is that a fair test, whether on a two-cent rate or not?

A. I believe it would be.

Q. I would ask you separately as to the different classes of freight, but I am asking you now as an entirety.

A. I believe the six months ending December 31 will be a reasonable period and a fair test of the result of operations on our line.

Q. A fair test for what period of a year?

A. A fair test for any period, to show the returns upon the property, or of the earnings to the road.

Q. Do you think that would be a fair, representative period of your earnings and expenses?

A. Yes, sir." (R. pp. 134, 135.)

Mr. Johnson says the panic begun in October, 1907, but did not affect the earnings of the line to any great extent in October, but begun to be felt in November. (R. p. 136.)

Mr. Johnson was questioned at some length on the percentages of the various expenses apportioned to Arkansas and summed up his evidence on that subject as follows:

"The average charge upon all those accounts to the State of Arkansas for the six months is a fairly normal charge." (R. p. 193.)

Mr. C. E. Perkins' opinions on traffic and rate conditions were exhaustively given at the instance of plaintiffs. In his rebuttal evidence this occurs on cross examination:

*A Traffic Opinion of
Using One Month
To Test
Intrastate and Interstate.*

"Q. You have heard a great deal of testimony here, I presume, from witnesses largely on the railroads' side in this case, that State and interstate traffic moves hand in hand, that they move together, haven't you? A. I do not know that I recall that testimony.

Q. You know that to be a fact, whether or not you heard that testimony, don't you?

A. I would say, generally, yes; that is true.

Q. If you take a given month, or a given six months' period, or a given year, and you take all the revenue, State and interstate, for that given period, wouldn't it ordinarily reflect the same movement of the same classes of freight, State and interstate?

A. For a given time?

Q. Yes.

A. As between State and interstate, I should say it ought to.
(R. pp. 1631-1632.)

The last witness of the plaintiffs in their case in chief was Mr. W. M. Whitenton, Manager of the Rock Island lines in Arkansas, Oklahoma and Louisiana. The two test months' statistics previously put in were of all the freight traffic *Whitenton's Test Month.* for the month, but Mr. Whitenton's test was for part only of the trains for a month, but he considered it sufficient. The testimony covering it is as follows:

"Q. Have you made any special investigation or test for the purpose of determining in any way the relative efficiency of the service applicable to State and interstate traffic, either freight traffic or passenger?

A. We made some tests on freight traffic in Arkansas.

I think from about November 22 to about December 21, 1908; that is about the date those tests were made.

Q. Will you state what the test was and what was developed through it?

A. The tests were made by putting men on trains and seeing just what each train handled, with regard to State and interstate business.

We did not work up all of that data, but we did take ten local freight trains and ten through freight trains, and worked up some data as to the per cent of State and interstate business on those trains.

Q. Who had that done; was it under your supervision?

A. It was partially done under my supervision. I outlined many of the methods used and went over a great deal of the information at the time it was compiled; that is, at the time that the men would make their test on the train. It all came to my office and I personally handled a great deal of it. The actual figures taken from these

reports on the ten local freight trains and eight through freight trains, were compiled by some of our accounting officers from these reports and worked by the men we had on the train.

Q. What did that show, as to any bearing in regard to the matters that you have been testifying about?

A. On the ten local trains, the per cent of State freight to the total freight handled, was 17.9 per cent. In other words, approximately 18 per cent of the total was State freight, and 82 per cent was interstate freight on those ten local trains.

That 17.9 per cent of State freight handled on those ten local trains represents about 60 per cent of the total State freight handled on the 18 trains that was worked up.

The L. C. L. or less than carload State, to the total State handled on the ten local trains was 11.2 per cent.

The less than carload interstate to the total interstate handled on these ten local trains was 4.6 per cent.

(He gives other statistics, car-mile haul, dead weights, etc.)

* * * * *

On the eight through freight trains, the percent of State freight handled on those trains, to the total freight handled, was 5.1 per cent. or, you might say, that of the total freight handled by those eight trains, 95 per cent of it was interstate freight and 5 per cent was intrastate freight.

Of the 18 trains combined, the through freight trains and the local freight trains, the per cent of State freight handled to all was 9.2 per cent. In other words, of those 18 trains, we will say 91 per cent was interstate and 9 per cent State freight." (R. pp. 755, 756.)

On cross examination it was shown that his road tried to cover everything for a month, but only worked up statistics of 18 of the trains; and gives routes of the trains worked up, and his examination continues:

"Q. How many freight trains does your road run a year in Arkansas?

A. I do not know.

Q. How many a day, then?

A. Oh, I could figure that out, of course—

Q. I would like to know somewhat within the range of what it is; I could not expect you to give an absolutely accurate answer, but you ought to know, generally speaking, how many freight trains you run in the State in a day.

A. I can figure up now about two scheduled freight trains which we have in the State of Arkansas.

Q. By schedule do you mean local?

A. Local and through, both; they are both scheduled.

Q. That is 32 per day?

A. Yes, sir.

Q. These 18 that you referred to were taken out of a period of ten days?

A. November 22 to December 21.

Q. A period of about thirty days. In that thirty days it would be 960 scheduled trains that you would run in that period?

A. If that is what it figures out, that is what it would be about.

Q. Within that period you would have some extra trains run, would you not?

A. Yes, sir.

Q. In round numbers it would be something like 1,000 trains run in that period?

A. I expect so.

Q. And you have given us the benefit of 18 out of 1,000?

A. That is what we have taken; whatever that would be.

Q. Do you think that would fairly represent the percentages of your traffic as you have given them in those 18 trains?

A. I think that would be fairly representative; that is my opinion about it.

Q. Do you know that there are about 1,300 trains in Arkansas, on the Iron Mountain alone, in one month?

A. I don't know anything about that.

Q. But you think these 18 trains out of 1,000 would be fairly representative of the percentages as you have given them here?

A. Yes; I think it would, because in taking that we represent all of the territory; practically all of the territory." (R. pp. 760, 761.)

The vigor with which it is contended that local trains are composed of intrastate traffic almost entirely was all in the record before Mr. Whitenton's test was introduced. The subsequent attack on the statistics showing 68 per cent on Cotton Belt and 72 per cent on the Iron Mountain of the local train was interstate freight becomes amusing in view of Mr. Whitenton's test on the Rock Island in the same country, handling the same commodities and in a subsequent month and shows 82 per cent of the freight on the local trains was interstate.

Mr. Whitenton shows 5 per cent of the through trains' load was interstate, and that the intrastate traffic was divided 60 per cent on the local and 40 per cent on the through, i. e., 18 per cent of the local load was interstate, but that composed 60 per cent of the intrastate traffic, while the 5 per cent on through composed 40 per cent of it.

Exhibit "I," worked up from exhibit 26, shows also 5 per cent of the interstate on the local train, but in this case it constituted 60 per cent of the interstate traffic.

This representative test of the traffic on 18 trains is another refutation, by facts, of theories; i. e., that intrastate traffic is enormously expensive on account of the expenses of the "beast of burden"—the local train—when 82 per cent of that expense on the Rock Island is attributed to interstate freight, a different face is put on the problem.

THE ATTACK ON THE VALUE OF TEST MONTHS.

The testimony of plaintiffs in rebuttal on the value of the test months was of three classes: (a) Opinion evidence that one month, especially October, was not representative of six months' business, thereby coming in direct conflict with Kimbell, Doddridge and Whitenton and Johnson. (b) That there was a congestion of traffic in October, 1907, on account of which the local train carried more inter-state traffic than in normal times. (c) That exhibit 26 was made up from the auditor's books and not from actual movements on the road, and it would not therefore represent the actual movement; and, moreover, that the State in working up the performance of the local trains took actual movements, and the result of those subtracted from results shown on the books would not be accurate, due to the lapovers. (d) The other attack is two insignificant for extended notice, and that is as to the accuracy of exhibit "I," prepared by the State from exhibit 26 of the Iron Mountain.

It will be noted that only the first of these grounds reach to the Cotton Belt test, all the others reaching to Iron Mountain exhibit 26 and State's exhibit "I," based on it.

THE USE OF ONE MONTH'S TEST.

(a) The witnesses on this proposition were Mr. Frank Nay, Comptroller of the Rock Island; Mr. Frank E. Ward, Manager of the Burlington road, and Mr. Carl R. Gray, Vice President of the Frisco road. Mr. Nay says: "I should say that no month is representative of any six months, or any twelve months, and, certainly, if I would choose a representative month, I would not choose the heaviest month in the year."

An average month might be more representative than either the heaviest or the lightest month, but I think when actual results are desired, no one month should be taken as representing a period." (R. p. 1822.)

In cross examination this occurred:

"You have objected a good deal in your direct examination to the use of one month as a representation of a six months' period, or a year's period, as testing State and interstate results. You do not believe it is fairly representative for that purpose, as I understand you?"

No, sir; I do not." (R. p. 2024.)

Then the testimony of Messrs. Kimbell and Doddridge, heretofore quoted, was read to him, and he was asked as to his agreement with them, and he disagreed. (R. pp. 2024-2026.)

Then this occurs in his cross examination:

"Q. In view of the testimony of these two very distinguished gentlemen, who are so thoroughly familiar with these two roads, do you think the State is subject to criticism for taking one month's business as representative of six months?

A. That is an embarrassing question, the way you have put it to me, but my judgment is they are.

Q. Notwithstanding Dr. Kimbell and Dr. Doddridge differ with you?

A. You press it so it makes it rather embarrassing to answer.

Q. That is a fact?

A. I think I have stated it before. I would like to agree with everybody but I can not.

Q. There is another question I think would be fair to ask you, Dr. Nay:

You have spoken a good deal in your testimony of the consistency of our position: What do you think of the consistency of the railroads here, proving by these distinguished witnesses in their case in chief that one month was fairly representative of a year's business; and then proving by an equally distinguished gentleman, who is now on the stand, that in his opinion it is not:

Is not there some degree of inconsistency in that?

A. The testimony shows that the witnesses do not agree in every point. In fact, if witnesses agreed on every point it might look as if they had all been coached and told what to say, in advance.

Q. Certainly. But isn't there an inconsistency in the positions I have stated to you?

A. I don't understand just what you mean. There is a difference of opinion.

Q. The proposition is just this: In making its case in chief the railroads put on these two distinguished gentlemen thoroughly familiar with affairs on those roads and proved by them that honestly in their judgment one month was representative of six months or of a year's period, or of a series of years, as between State and interstate traffic; and now they put on another distinguished gentleman, honest in his opinion, to prove that is not the case:

Is not that an inconsistency?

A. I think it is a difference of opinion, because I think each man has been consistent throughout.

When I spoke of inconsistency I spoke of the same man using one method in one division of expenses and then switching to a different method for a division of a similar expense.

Now, I do not understand that that is the case in the question you are asking?

Q. I am removing the personal equation and putting it as to the railroads:

Both these gentlemen are entirely consistent and so are you. But here is the railroad proving by one set of gentlemen, who are con-

sistent, who held one view, and then in their rebuttal testimony they are proving by another consistent gentleman another opinion, on the same point in the case.

A. I do not think I should be asked to pass upon the position of the railroad. I think the court can do that.

Q. I think the question rather answers itself, anyway."—(R. pp. 2026, 2027.)

Mr. Nay admitted that in a recent hearing before the Interstate Commerce Commission on the application of Western roads for an advance of rates, he had presented the statistics of one month completely worked up, supplemented by the revenue of three weeks, "as the best index we had." (R. p. 2029.)

It seems he was questioned as to whether he regarded one month and three weeks as a fair index of the volume of traffic or earnings or expenses for the year compared with a prior year, and he said it was the only index he had. He admits he put it in as an index, and gave his opinion and judgment of the future based on that index.

One month's detail of traffic, earnings and expenses, supplemented with three weeks' revenue, is thought to furnish an index of business entitling his road to an advance of rates, but one month, selected by another road and used by the State after it was selected as representative of volume of business and the relation of transstate, interstate and intrastate is quite faulty. It takes a mental gymnast to entertain both views.

Mr. Frank E. Ward, in rebuttal, said:

"In the first place, the taking of any one month would not, in my opinion, be safe for determining so important a thing as the cost of performing service, when it is to be used for determining the revenue of the company.

The months vary very greatly, one from the other. The month of October, on most railroads in the West, is a month of very heavy business, by reason of the difference in the method of taking record of the tonnage, part of it being taken from billing, and part from the date of receipt, there would be a very great opportunity for tonnage to be omitted that was actually carried in that month. Or, on the other hand, there might be a great deal of tonnage included in the figures which would not move at all on the rails of the company during that month. Therefore, the great uncertainty as to the accuracy of the tonnage would make the first grave doubt as to the accuracy of the method for computing the cost.

* * * * *

I do not believe that any one month should be taken or could be taken as a basis upon which to determine an accurate computation. Any month might be a high one or it might be a low one; and if it should happen to be correct in any given case it would be so purely by accident and not by reason of the inherent accuracy of the theory. No short period of a day, a week, or a month, would be safe. They

would all give opportunity for variations sufficient to destroy the value of the method as a means of determining the separation of cost." (R. pp. 1854, 1855.)

In cross examination, Mr. Ward was read the testimony of Messrs. Doddridge and Kimbell heretofore quoted, and admitted he was not familiar with these roads, but he would not accept the test, saying, "It is a thing that can not be measured out by figures and facts, even though you put men on the trains to watch every movement."

He positively disagrees with Doddridge and Kimbell that one month could fairly represent six months or a year, or a series of years so far as the relation of interstate and intrastate traffic is concerned. (R. p. 1876-1879.)

Mr. Carl R. Gray, Vice President of the Frisco road, testified on this subject as follows:

Q. Mr. Gray, I want in that connection to have you state your views as to whether October, or any one month out of six months, say of the last half of 1907—is that month of October, in your judgment, to be used arbitrarily as representative of the six months, with reference to that class of expense?

A. From my knowledge of the conditions on all Southwestern railroads in October, 1907, I would say that in my opinion for a comparison of this kind it would have been difficult to have selected a month in which the results would have been more misleading as applied to a longer period, for the reason that the congestion reached its flood during that month, and the conditions which were distorted by reason of the efforts of the operating department to move this unprecedented tonnage would reflect themselves through all of the remaining months, and the proportion of tonnage included which really did not move in that month, and the proportion of tonnage excluded which did move in that month, due to the Auditor's method of keeping his ton miles, would equally distort, and perhaps distort more greatly, all of the other months." (R. p. 1898.)

In his cross examination, the history of the Iron Mountain exhibit was brought out, as hereinbefore set out. He disagreed entirely with the testimony of Messrs. Doddridge and Kimbell, and finally said he did not believe a test could be made at all. (R. pp. 1927, 1928.)

Then this occurs, to which especial attention is invited:

"Q. Mr. Gray, my question is, after this statement was put in evidence, and after it was compiled by the railroads in the way you have heard stated, and after the railroad witnesses used that statement for various purposes, to illustrate their position in regard to the statistics, contained therein, was not the State justified in using that exhibit as a basis to illustrate those same conditions?"

COLONEL MOORE: That is objected to because that is calling on the witness to make a statement about a

Gray
Estops
Plaintiffs in
Their Attack on
Test Months.

matter which should be determined by the court and should be determined only by the court and not by the witness.

JUDGE HILL: I think the witness has passed upon questions similar to that, in answer to your questions yesterday, and I think I am entitled to ask his opinion about it.

A. My answer to that would be that if a month's statistical data has been testified to by the competent officials of that company as being a representative month and safe to apply to a period of six months, the State would be justified in assuming that for the basis for that six months.

COLONEL MOORE:

Q. You mean for the purpose for which it is being used here by the State? If the railroad accountant represented it was a proper basis for the use that has been made of it here.

A. I meant to say, if that had been testified to by the competent officials of the railroad, which would include the accounting and include the operating officials, as being one which was safe to use for a basis for six months' business, then the State would be justified in so using it.

Q. You mean if they testified it was safe for the purposes for which they used it?

A. Yes, sir.

Q. And not safe for other purposes?

A. I mean it is reasonable for them to think it was safe to use it for the purposes for which they used it.

Q. Suppose the railroad officials testified that would be properly representative of six months for one purpose, and the accountants for the State used it for another and different purpose.

A. My answer must be considered as meaning that there should have been (to be of value) unanimity of opinion among the competent officers of that company, that that was a safe month to use as illustrative of an entire period.

Q. For the purpose for which the exhibit you criticise was used, for ascertaining the relative amount of tonnage carried by local and through trains in the month of October, 1907?

A. Yes, sir; that is right.

I want to add this to that answer: That the amount of tonnage carried on local and through trains is not the only deduction which the State made from these October statistics and that my criticism extended to all of that in the same proportion." (R. pp. 1930, 1931.)

The fairness of the State's position so appealed to Mr. Gray that in the above straightforward manner he justifies the State fully in the use of the test months, although in his direct testimony his criticism of using one month was both severe and caustic. But when the facts are developed, like any fair-minded man, he says the State was fully justified in using one month as a basis for the six months.

In truth, a system of rates ought not to be tested on the six months' statistics, but when the plaintiff stood on the six months, their officials testified it was a normal period and fairly represented a series of years, necessarily, the State had then to ascertain all facts possible regarding that six months. It asked for three months' statistics of the Iron Mountain, and the road declined to compile them, but offered one month which it had selected as representative and had worked up in anticipation of such request. If the State had worked up every detail of the six months as it did this month, the treasury would be empty and the case not yet ready for trial. We have no evidence of the length of time it took the plaintiff's road to compile exhibit 26, which represented the movement of all freight on all trains and all the expenses and all the revenue.

Using it as a basis, it took a force of trained accountants six months to work the local trains' movement, expenses and revenue and tonnage, and it represented probably one-fifth of the tonnage.

The Interstate Commerce Commission has designated March and October as two months to serve as an index of a year's business.

Mr. Nay testified:

"I have talked with one of the representatives. I forget, now, who it was, but, I think it was Mr. Lutz, who is assistant to Professor Adams, and he picked those out as being perhaps average months—not being the largest months nor the smallest months." (R. p. 2032.)

That is exactly what is needed—an average month, not the largest, not the smallest.

When the plaintiffs only test out their case with six months, certainly the State is justified in using the average of them, even if it had selected it and worked it up, instead of which, the plaintiff selects it, introduces it, uses it and then when it results in their overthrow, seek to reject it.

(b) Was there a congestion of traffic in October, 1907. In view of the selection of this month as normal and representative, and its use by the plaintiffs to make their case, it ought to be wholly immaterial whether it was congested or not. They are entirely dependent upon it for their transstate traffic, and if congested, the transstate statistics are wholly unreliable, and without the transstate traffic going through the State "as if on a bridge," with a "straightaway movement," where would the 100-plus per cent of extra cost be?

Was October, 1907, a Congested Month? The evidence of this was opinion evidence of Mr. Gray, already quoted, and Mr. Ward, who said October, 1907, was an exceedingly heavy month; in fact, in the entire West, business was heavier that month than in any previous month in the history of railroading (R. p. 1857), and also the opinion of Mr. Nay.

It is easy to express general opinions on these subjects, but unsafe.

Mr. Nay expressed an opinion as to the first half of 1907, compared with last half, and was confronted with the statistics and found he was mistaken, and then said that the first half of 1908 (the worst part of the panic, as all admit), would be as fair to compare with as to take last half of 1907, and compare with first half of the calendar year, 1907, because the panic began the latter part of October, 1907, and the "slump" showed up in November. (R. p. 2015.)

If Mr. Nay is right, the plaintiffs can not maintain this bill based on conditions of the last half of 1907. The answer raises exactly the point he makes—it was a period of panic and distress, and not a normal period with which to test a system of rates in vogue for the past eight years.

The plaintiffs introduced testimony to overcome these allegations; they said the revenue and expenses were normal, and it was a fairly representative period.

The State dug into the details of that period as it was its duty, and found intrastate traffic making as much return as interstate, and both compensatory.

To overcome the State's evidence, the basis used is attacked as a congested month, and Mr. Nay attacks the whole period as abnormal and suffering from a panic.

But it makes little difference whether congested or depleted, the consensus of opinion of practically all the witnesses on both sides is that interstate and intrastate traffic respectively moves uniformly.

The only evidence of any importance bearing on the congestion is that of Moore, Cannon and Brown.

Mr. B. W. Moore was night yardmaster in the Little Rock terminals in October, 1907.

He says there was a general congestion of traffic during that month, owing to the heavy movement.

That such congested condition made them add to their local trains probably 500 to 600 tons in order to move as many cars out of the terminals as quickly as possible.

He says the superintendent issued orders to utilize all the power of the local trains, which had light engines of 1,200 tons' capacity, and not to exceed 1,000 tons on each division.

The through trains, he says, at all times, carried full capacity of the engine, and that is not true of the local, and the excess of cars in the terminals from St. Louis, Kansas City and New Orleans, Alexandria and Memphis, and under orders of the superintendent, these excess cars were added to the local trains; ordinarily, the local trains only handle local cars and L. C. L. freight on the local divisions.

He says local trains came in from other division points with additional cars, using the full capacity of the locomotives, and says it was mostly freight from without the State. (R. pp. 1777-1779.)

In cross examination, he says the congestion continued into Janu-

ary, 1908, but in March, 1908, the movement was normal. (R. p. 1783.)

Mr. John Cannon was Superintendent at Little Rock in fall of 1907.

He says in that fall they departed from the usual practice of loading local trains, owing to the heavy movement. In normal times, the local freight handled nothing but L. C. L., and short loads for its own territory.

During the fall of 1907, in addition to that class of loading, the locals were filled to nearly their maximum tonnage, though loads, loads that went the entire division.

The excess tonnage ran from 300 to 800 tons per day—gross tons, the car and its load; and the excess tonnage was mostly interstate.

In his opinion, the local train in October, handled 75 per cent interstate, and in normal times, 25 per cent. (R. pp. 1797, 1798.)

On cross examination, he said this was only his opinion; he had no statistics on it. To know definitely would require scrutiny of the waybills, which he did not make, and never before had he had occasion to study the problem of how much interstate freight was carried on the locals.

Mr. H. V. Brown was terminal clerk (R. pp. 1798, 1799), in Little Rock in October, 1907.

He says the congestion of traffic in October increased the tonnage of the local trains.

He says in normal times the local handles about 70 per cent of State freight, and not to exceed 30 per cent of interstate freight. But during October, the proportion of interstate freight on the local was 60 per cent. (R. pp. 1805, 1806.)

On cross examination, he admitted he thought all the Fort Smith traffic was intrastate; it is a heavy traffic, and especially heavy in October, 1907. (R. p. 1807.) (The undisputed fact is, that it is all interstate.)

His attention was never called in the performance of his duties, as to whether freight was State or interstate, and he only saw the waybills of four local trains, and that is the extent of his observation of the movement of freight in October, based on four local trains out of Little Rock. (R. pp. 1807, 1808.)

An analysis of this evidence is important, except the last witness, whose observation was so limited that it is of no moment.

Cannon says:

"During the Fall of 1907, in addition to that class of loading the locals were filled up to nearly the maximum tonnage with through loads, loads that went an entire distance over the district the local was run on. That excess tonnage ran all the way from 300 to 800 tons per day." (R. p. 1798.)

Moore says:

"A. We added to our local movements and added tonnage of probably 500 to 600 tons.

Q. To the train?

A. Yes, sir; to the train. (R. p. 1777.)

Exhibit I (R. p. 2518), shows loading of revenue cars averaged 18.6; on through freights, 19.2 tons.

Taking 600 tons as the average of Cannon and Moore of additional tonnage put on local trains, and see the effect. It was stated by Mr. Bee, in a calculation which seemed to have been accepted, that 35 tons was an average car and load (R. pp. 1282, 1283); considering the average load, as above found, we presume this is sufficiently accurate to use.

Six hundred tons of gross weight would therefore represent 17 cars. Exhibit I shows local trains averaged 16.6 cars, and through trains 33.2 cars.

If Mr. Moore's version is correct, that 600 tons were added to each local train, then, more was added than the whole local train, and it started with nothing but engine and caboose, and its whole load added. If Cannon's version is accepted as 300 to 800 tons added daily to all the trains, then these 17 cars would be lost in the totals.

Mr. Roth and Mr. Hamilton agreed that there were 46 trains by number, but about 1,400 individual local trains running during that month. (R. p. 1974.)

We assume there were 46 regular locals running for the month, would make nearly 1,400.

Not quite three cars would be added to each local according to this version of the excess tonnage. Less than three cars per day on the locals changes the complexion of its freight from 25 per cent interstate to 75 per cent interstate!

Exhibit 26 (R. p. 2391), shows the number of tons moved in Arkansas for October, 1907, was 643,404; this would be an average daily movement of 20,755 tons per day. Six hundred gross tons, approximately 400 tons daily, do not cut much figure in a daily movement of 20,755.

As the through trains have double and a little over (16.6 to 33.2), cars to the train, and the loading of through cars is four tons heavier than the local, and the number of local trains run is less than the through (R. p. 2518), it is apparent that, roughly speaking, at least four-fifths of the total tons was carried on through trains.

This conforms, roughly, with the relation in ton-mileage shown in exhibit "I," page 2516. The local ton-mileage is 11.17 per cent, and through, 88.82 per cent. As the local run is shorter, and it carries much more short haul—intrastate and interstate—freight than do through, necessarily the proportion in tons would be greater than in ton-mileage.

For instance, the oft-quoted 51 per cent transstate is in ton-mileage, while in tons it is only 33.61 per cent. (R. p. 2391.) Therefore, we think we can safely assume that 20 per cent of the daily movement of 20,755 tons would be ordinarily carried on the local train as a daily movement on local of 4,151 tons—an addition to that movement of from 300 to 800 gross tons daily, say 600, or only 400 tons of actual freight, and it is seen that excess movement represents less than 10 per cent increase to the load of the local, and yet, Cannon, on account of it, changes the complexion of the local from 25 per cent interstate to 75 per cent interstate—another case of Theory v. Fact.

But really, it is useless to pursue this class of testimony as the undisputed statistics absolutely disprove the Cannon-Moore-Brown theory, and establish beyond controversy that October was a normal month of the six months' period so far as operation of the trains are concerned.

STATISTICS DEMONSTRATE OCTOBER NORMAL.

Some uncontested statistics prepared by Mr. Hamilton and calculations of data in the railroad statistics demonstrate that October was a normal part of the six months' period:

"Q. One of the witnesses for the Iron Mountain, in rebuttal, Mr. Cannon, I believe it was, testified that during October, owing to a congestion of the business, that there was a shifting of through business on to the local trains in Arkansas—probably other witnesses expressed opinions along that line, but I remember that one in particular:

Have you investigated that question and prepared any statistics on that subject?

A. Yes, sir.

Q. I wish you would give us the benefit of it.

A. Exhibit "I" filed by the State, covering the month of October, 1907, shows the average number of cars per local train to have been 16.6.

As I recall what Mr. Cannon said, he stated that to relieve through trains during the month of October—which he said was a more or less congested period—they had burdened the local with more than it would ordinarily haul of freight which went from one end to the other of its run. That is, it carried some of the burden of the through train during that period, and that that would reflect itself in any ton mileage figures that might be made as to the local trains' performance.

As I recall it, he stated that that would result in putting more than a normal amount of interstate ton mileage on the local trains.

Q. That is the substance of it.

A. I have had in the last week or two weeks, the wheel reports for all of the local trains on the Iron Mountain in Arkansas, for the month of March, 1907, a spring month of the same year.

I find that the average cars per local train, for that month, were 16.7.

Q. What was it in October, 1907?

A. Sixteen and six-tenths.

COLONEL MOORE: I do not think it is proper for you to go back—

JUDGE HILL: You are the one that brought that in in rebuttal. We took your testimony to begin with, that October was normal. We did not introduce testimony on that, and then in rebuttal you took this testimony of Cannon and others, to show it was not.

COLONEL MOORE: This is objected to because it is a reopening of a matter that has been gone into before by the State.

A. The figures that I have just quoted were obtained from the wheel reports and the car-mile calculations shown in the wheel reports by the statistician in the car accountant's office.

Those figures which we have abstracted for the local trains were an integral part of the total car mileage figures made by them for that month for the information of the operating officers of the company and other statistical purposes.

The method followed was to abstract the car miles made by the local and the train miles made by the local, and dividing the car miles by the train miles to get the average number of cars in the train each mile, which is exactly the process followed in compiling exhibit "I" for October.

Q. You just matched March, 1907, with October, 1907?

A. Yes, sir.

Q. And found on the second decimal a difference of one point?

A. On the first decimal a difference of one-tenth of a car more in March than it was in October.

Q. Have you any other statistics on that point?

A. Do you mean as to the normality of October, from a transportation standpoint?

Q. Yes.

A. Yes, sir. I have made a comparison of the October movement with the six months which covers the period of our inquiry in this case, the last six months of 1907.

I find that the freight train miles made in Arkansas on the Iron Mountain in October, 1907, were an exact one-sixth of the freight train miles made in the six months ending December 31, 1907—16.63 per cent, an exact one-sixth.

I find that the freight car miles made in October, 1907, were also one-sixth of the freight car miles made in Arkansas during the latter one-half of 1907; they were 16.57 per cent, virtually one-sixth.

Q. You mean per cent of what; of the total train miles made?

A. No. The October car miles were one-sixth of the freight car miles made in the six months' period.

Q. Ending December 31, 1907?

A. Yes, sir; the period of our inquiry here.

Q. Anything further?

A. No, sir." (R. pp. 2260-2262.)

The Interstate Commerce Commission has selected March and October as the two average months to work out this class of problems when representative periods must perforce be taken. (R. p. 2032.) We find in October, the local trains carried an average of 16.6 cars, but according to the Cannon-Moore-Brown theory, these local trains had from 300 to 800 gross tons a day (or on each train), in them, over ordinary movement, and therefore, it is unreliable and abnormal; but, in March, 1907, when there was no charge of abnormality, the local trains averaged 16.7 cars per train.

Mr. Roth testifies that there is a heavy cotton movement in Arkansas in October, the effect of which would be to load the local with an increased percentage of interstate traffic—as cotton is all interstate. (R. p. 1975.)

But in March, there is no heavy cotton movement, and yet the local train has as many cars then as in October.

Mr. Gray testified that on roads in the Southwest in October, 1907, the congestion reached its flood and conditions were distorted, owing to efforts of the operating department to move their unprecedented tonnage, and any comparison based on that month would be misleading. (R. p. 1898.)

A mathematical calculation demonstrates that the freight train miles made in October, 1907, on the Iron Mountain were 16.63 per cent of the freight train miles for the six months ending December 31, an exact one-sixth.

When the number of miles made by all the freight trains for that month were exactly a representation of the six months, it seems that the conditions were not badly disturbed so that operating comparisons with it would be misleading. According to the Cannon-Moore-Brown theory, however, additional cars were put on the local, the through at all times running to its engine potentiality, and the train miles would not detect the excess loading of the local, but the next mathematical calculation demolishes that also.

The freight car miles, taking the individual cars run, not the train's run, were 16.57 per cent of the freight car miles of the six months period, a trifle less than one-sixth.

It is true that the ton mileage for October was more than a sixth, and also true that the revenue was more than a sixth, but neither of these facts affect the operation of the traffic, the revenue varying according to commodities—in both classes—moving according to the season, and in this instance, the State and interstate keeping apace with each other, and the ton mileage also varying by length of haul and amount of tonnage, but where the train movement and car movement are normal, the variance in ton mileage and revenue would not

affect the expenses at all, and it is expenses with which we are dealing.

Judge Trieber finds indications of abnormality of October in the greater ton mileage and greater revenue (R. p. 2622), but he overlooked the fact, the pivotal fact of this inquiry, that the relative movement of intrastate and interstate was normal notwithstanding a larger total ton-mileage than the average.

Exhibit 5 of the Iron Mountain (R. p. 2327), gives the tons and ton-miles, intrastate and interstate, for the six months' period and their percentages.

The intrastate ton mile for the six months is 7.25 per cent of the total, and interstate, 92.75 per cent. Exhibit 26, giving the same data for October; intrastate, 8.15 per cent; interstate, 91.84 per cent. (R. p. 2301.) What boots it if the ton mileage is 20 per cent greater in October over one-sixth of the period if it is so nicely represented in the relative movement of the two classes of traffic?

While this difference is slight, nine-tenths of one per cent, it is significant that that small difference is in favor of a larger intrastate movement for the test month than for the six months' period. The gist of the attack on October is that congestion had put an extra amount of interstate traffic moving on local trains; more cotton than normal was moving, etc., and yet here the Iron Mountain's own figures show the movement for October relatively between the two classes of traffic practically identical, what little difference in favor of the interstate, just the opposite of all this testimony attacking the normality of October.

The revenue relation was likewise practically identical for the test month, and the six months; exhibit 5 gives revenue per ton per mile, in mills, intrastate, 13,377, interstate, 6,750.

Exhibit 26 shows for October, revenue per ton per mile, in mills, intrastate, 12,826, interstate, 8.15. Just half a mill difference in revenue per ton per mile intrastate for the six months compared with the test months, and that difference in less revenue per ton per mile in the test month. The interstate is not quite a mill and a half difference between the six months and the test month, and that difference in favor of greater revenue for the interstate for the test month. These statistics absolutely destroy any significance to be attached to larger ton-mileage and larger revenue for October than one-sixth of the period; they show that the ton-mileage is increased, but exactly in the same proportion that it held in the six months' period with slight variance in favor of intrastate, enough to destroy the theory of congestion of interstate over intrastate.

Revenue is always fluctuating and has little significance, but in this instance, the intrastate revenue is nearly constant with itself; indicative of no abnormal movements at least. The interstate is not quite as constant with itself as the intrastate and reverses the relative proportions of increase from the intrastate; the intrastate, October,

being a half-mill less per ton per mile than for the period while the interstate for October is a mill and a half greater than for the period.

After reading the way rates are made, and exist, anything may be expected in revenue statistics.

However, the revenue statistics are of no moment here, other than indication that no violent changes are occurring in October contrasted with the six months, as this is a question of expense, not revenue, under consideration.

The evidence is full of variations from shifting of commodities, due to seasons and trade conditions, but all agree that the commodities and seasons affect State and interstate alike.

The way rates are built up, resulting in the patchwork interstate rate system in existence may account for any sort of revenue charges in interstate traffic, owing to whether the freight originates or is destined to different points, the favor of the tap lines participating in hauls, etc.

But we are dealing now with expenses, not revenue.

Judge Trieber quotes the ton-mile statistics from exhibit 54, giving intrastate ton mileage only.

We have given you the ton mileage of both intrastate and interstate from the railroad's own exhibits, and shown that the increased ton mileage in October over one-sixth of the period accrued alike to intrastate and interstate, and therefore could not affect the problem before us, to find the relative cost of the two classes of traffic.

The ton mileage would not increase cost unless it increased train or car mileage, and as shown in this month, it did not; with the same train and car mile as the period the road achieved greater ton mileage and greater revenue, and no additional expenses could attach for it, and if it did, it attached alike, as their increased ton mileage continued like Siamese twins, as some witness expressed the movement of State and interstate traffic.

(c) The next attack on exhibit 26 is that there were "lapovers" from October into November which would not be accounted for in the methods pursued. The exhibit was made up from *The Lapovers*. the Auditor's books, which show all freight billed in October, but in the latter part of the month some would not move or complete the movement until November, but would appear as October business. The State's accountants worked up all the local trains from the wheel reports and waybills, and got all the actual movement in the month, and subtracted the total local freight from all freight shown on the books. There would necessarily be some inaccuracy in this. Mr. Nay, Mr. Ward and others contending a serious inaccuracy, Mr. Ludlam, Mr. Hamilton and others on the other side, contending it would be negligible and that the lapovers from September into October, which would go into their statistics, would compensate for the lapovers from October into November, which would not go into their statistics. Moreover, the State con-

tended that for the purposes of this case, it would not be important whether the lapovers equalized each other or not, because all the witnesses agreed, and the statistics proved, that intrastate and interstate moved alike, and whatever inaccuracy there might be in this system, would not affect the relative cost, as there would be proportionately as much lapover in one class of traffic as the other.

There is a great deal of evidence on both sides as to this, which was directed to the State's plan of dividing expense, and that is the appropriate place for the consideration of its detail—if it be considered worth while.

Mr. Roth introduced some statistics on it, to which attention is called.

He analyzed one-third of the local trains, as worked up by the State's accountants, and said it would have taken a year to have analyzed all the trains. He says in these analyses that 30.5 per cent of transstate was not included in October, that 15.5 per cent of interstate was not included in October, and 6 per cent of intrastate was not included. (R. p. 1974.)

Mr. Roth was sick and could not be cross examined (R. p. 2250), and we have no information other than the facts stated, but he does not state the other side of it. Considering the movement of the traffic being uniform, if he had examined the same trains for the September lapovers, there would doubtless have been the same relative amount, as there is absolutely no reason why one should not offset the other. Moreover, many of the trains analyzed by him run near the borders where the interstate lapovers would be greater, as he admits. He should have taken all trains, and not selected some, in order to get fair results.

A queer thing is that he found transstate freight on local trains. He does not give the amount of it, but shows a large percentage of it in lapovers.

How Mr. Doddridge's transstate freight, moving through the State "as if on a bridge," could get on a local train is a mystery; or how this transstate freight which only has "a straightaway" movement (McPherson), could stray away on a local is not explained. Whether it was a large quantity or a negligible quantity, only large in percentage of lapovers, is unknown.

The Cannon-Moore-Brown theory will not explain it, for they say the extra interstate was put on local to be carried on that division instead of the through, and this would not apply to transstate.

But such statistics, without giving the corresponding lapover, on the same trains of September in each class of traffic add nothing to the solution of the problem.

Mr. Johnson admits in cross examination that the lapovers only apply to the tons and not the car miles, and to the other percentages used by the State in its plan of dividing expenses. (R. p. 2231.)

A lapover exists in all going concerns. No period can be taken without it. The six months' period has its lapovers. There are lapovers in revenue as well as expense, but when a normal representative month or period is taken, they will equalize themselves.

(d) The accuracy of exhibit "I" is the next, and smallest attack. The plan of making up exhibit "I," a deduction from exhibit 26 has been explained. Mr. Hamilton and a force of trained railroad accountants compiled it and turned over their worksheets to the railroad for verification, and a force under Mr. Roth, spent months checking it over. Mr.

The Accuracy of Exhibit "I." Hamilton was cross examined at great length regarding his plan of work, etc., and finally examined as to the detail of many cars, their weights, classification, etc., mistakes being assumed as to each of them concerning which he was questioned. (R. pp. 1553-1570.) He was given time to investigate the alleged mistakes and this was the end of the matter:

"Q. Mr. Hamilton, when you were on the stand before you were cross examined as to various cars you traced up that were put before you in the October movement, exhibit 'I,' I believe it was. Re-direct examination on that was deferred until you had time to look into the matter.

I will ask you if you have gone through that thoroughly and found out the extent of the errors upon which you were questioned in your cross examination?

A. Yes, I have gone over our worksheets since that time. By 'worksheets' I mean the sheets on which we worked up our figures which are condensed into exhibit 'I,' and have given particular attention to the cars referred to by Colonel Moore in cross examination on the subject heretofore. I found there were thirty cars involved which were referred to as making 68 different moves. That is, as appearing 68 times on our sheets. I do not mean that each of the cars appeared 68 times, but the 30 cars represented 68 movements in the local trains.

I found that our weight as shown in tons in our classification as between State and interstate was correct on seven of these movements. I found that we had omitted to locate weights for 43 cars in our statement, which cover some 20,835 cars.

I found that the 61 moves or 61 appearances of cars on our worksheets where we had made errors in ascertaining the weights or in classifying the weights when ascertained, would, when boiled down and applied to paragraph seven on page eight of exhibit K, result in taking \$257.68 from the cost of intrastate business and adding that amount to the cost of interstate business.

That would be the net result of making the correction in our figures.

"Q. Your error worked out against the State, then, to that extent?
A. Yes, sir.

Q. What percentage of error would that be? Have you ever figured that out?

A. If the changes I have indicated were made in exhibit 'I,' the percentage shown in that exhibit would read in this way:

Intrastate freight on local trains 39.02 per cent instead of 39.10 per cent.

Intrastate freight on through trains (I am speaking of ton mileage now) would read 60.98 per cent instead of 60.90 per cent.

Total revenue freight on local trains would read 11.17 per cent instead of 11.18 per cent.

Total revenue freight on through trains would read 88.83 per cent instead of 88.82 per cent.

Following that in exhibit 'K' it results in the change in dollars and cents to which I have already referred.

COLONEL MOORE: What cars does that result you have just now mentioned apply to?

A. It applies to the car numbers—

Q. To which I called your attention?

A. Yes, sir." (R. pp. 2555, 2556.)

After months of toil on both sides, the result of working the actual movement, freight carried, weights, classification, etc., of 20,835 cars there are errors amounting to \$257.68, and that against the intrastate. The overworked term, in this case, "negligible quantity" needs service again.

From every viewpoint, the integrity of the test months should be sustained. Good faith requires it of the railroads which offered them and based their arguments upon them; their accuracy is established; their representative character for the period is proved; the relation of the classes of traffic for the month compared with the period, is indisputably proved; the attack upon them is disproved and the facts contained therein should be considered as proof.

These months, if accepted as representative, serve the purpose of affording a basis in giving details, which has never before been worked out, of the operation of local and through trains, and the respective traffic carried on each, and though that the ascertainment of the cost of traffic carried on local trains and of traffic carried on through trains.

When the cost of each train is ascertained, then the train costs are attributed to each in proportion to the traffic carried of each class, and in this way, the cost of transportation may be worked out, leaving maintenance-of-way, maintenance-of-equipment, traffic and general expenses to be solved.

But when a practical plan of solving transportation expenses is found, the most difficult part of the problem is finished.

This method of division on this basis will naturally follow, but before it is taken up, we want to again call attention to the facts that the actual movement of freight in Arkansas, according to these

test months and the Whitenton test is so radically at variance with the conditions which plaintiffs' extra cost witnesses rested upon that the foundation is gone and the Court is at sea as to what, if anything, under these conditions is the extra cost.

It is absolutely certain that in the face of the 72 per cent of the load of the local train being interstate, and 61 per cent of the intra-state carried on the through trains, that any of this extra cost evidence based on little, if any, interstate on the local, and little, if any, intrastate on the through, is applicable.

When the case is cleared of these inapplicable opinions, then the mind naturally asks what is the extra cost, and how will it be reached?

THE STATE'S PLAN OF DIVIDING EXPENSES.

As foreshadowed in the preceding discussion, the State worked out a plan of dividing the expenses between intrastate and interstate. To restrict the controverted area the State limited its plan to expenses after the apportionment had been made to passenger and freight by the railroads and applied the return to the property apportioned to intrastate traffic by the railroads and used the railroads' apportionment of these and also used the railroads' figures without change of the many matters heretofore discussed wherein they contained errors and omissions, like the inclusion of both Memphis and Fort Smith terminal expenses, the expenses of the Paragould trackage, etc., and omissions of the Express Company dividends, rental of Pratt's Hotel and Bunch Elevator, etc.

The effort was to drive solely to a plan of apportioning expenses between intrastate and interstate, accepting for the purpose the railroads' amounts as starting points to demonstrate (1) that the expenses could be fairly apportioned, and therefore it was wrong to accept arbitrary bases for apportionment of them when they could be really and practically allocated with approximate accuracy; and (2) to allow for all items of extra cost of intrastate traffic in proper distribution of the costs of each traffic and then ascertain what the actual intrastate extra expense really was instead of accepting opinion evidence of it based on conditions shown to be not existing in the Arkansas traffic, whatever they may be elsewhere.

Mr. Wharton, a certified public accountant, a member of the firm of Haskins & Sells, and manager of their St. Louis office, prepared the plan. His firm is one of the great accounting firms of this country and of England.

Their business is to devise cost accounting systems for large business concerns and to audit accounts. They audit the accounts for many of the largest railroad corporations in the United States and their audits are published as guides to investors and for the information of stockholders.

Mr. Wharton has had no railroad experience. He applied his accounting knowledge, skill and experience to the railroad accounts

just as he would apply them to a packing house plant, automobile factory, a traction company or a great department store.

He had the benefit of the counsel and advice of Mr. Hamilton, one of his staff, an experienced railroad accountant, who had had 10 or 15 years' experience in various minor railroad positions before he was put to work on railroad accounts in the Missouri rate litigation. He had three years' experience in examining railroad accounts and statistics in that case before he undertook the statistical and investigating work of this case. Judge Trieber, in his opinion, says:

"Mr. Hamilton, who was present at the protracted hearing of this case and explained to the court many of the items in the statement filed as exhibits for the State, impressed the court as a man of ability, a fine accountant and a fair witness." (R. p. 2620.)

Mr. Wharton also had the benefit of the advice and opinions of Mr. Charles S. Ludlam, another member of the firm of Haskins & Sells, who is in charge of the railroad audits for his firm. Mr. Ludlam was a witness in this case, his biography is given and his railroad experience shown. He had many years' experience in railroad accounting in various positions in railroad service before he begun his work in the wider and broader field of public accounting. His years of labor devoted to examination, verification and clarification of railroad accounts splendidly equipped him for this work.

Mr. Wharton testified that in addition to assistance from these gentlemen, he gathered information on the subject from other experienced railroad men and made a study of the evidence in the Missouri Rate Case.

He thus explained the point of view with which he approached these problems:

"Q. Did you give that question study, thought and investigation?

A. Yes, sir.

Q. How long were you engaged on the Missouri Rate Case, Mr. Wharton?

A. I believe we started our work on that in June, 1906, and we were engaged on that, I believe, for almost three years. I am not sure as to the exact time, but it was something like that.

Q. During that time were you closely in touch with the issues in the case?

A. Yes, sir; all the time.

Q. And you are familiar with the methods of operation and expenses adopted by the railroads and adopted by the State in that case?

A. Yes, sir.

Q. Was your firm employed by the State of Arkansas in this case?

A. Yes, sir.

Q. State the purpose of your employment by the State of Arkansas in this case?

A. The purpose of our employment was to assist the State in getting at the facts in the case as near as possible, in determining the cost of State and interstate business as near as it could be determined.

Q. When did your firm begin to work for the State in this case?

A. In August, 1908, we were employed by the Traffic Bureau at Little Rock to assist the State in its efforts to resist the granting of the preliminary injunction.

Later we were employed by the State itself to do the work.

Q. By the Railroad Commission acting for the State?

A. Yes, sir.

Q. Do you recall about what time you were employed by the Railroad Commission to undertake this work that you have been continuously engaged in since?

A. I think about last June, May or June, was the time.

Q. Now, Mr. Wharton, begin at that point when you were employed by the State to begin this investigation and state the history and methods pursued by you, giving the reasons for the methods that you did pursue?

A. In our first consultations with the Railroad Commission and with the counsel for the State we discussed at considerable length the plans that had been followed in the Missouri Rate Case, and the plans that we thought might be worked out in this case.

The Railroad Commission and its counsel both desired to get at the actual facts, if possible, without the use of any theories of any kind and we went to work with that in view, from the reading of the testimony in the Missouri case and from—

* * * * *

From the reading of the testimony in the Missouri case and my understanding of the purport of that testimony, it appeared all the time that the differences in the cost of State and interstate business were mainly the differences in the cost of local and through trains.

The witnesses all seemed to testify that way and we determined that if it was possible we would work up statements showing the cost of local and through business and after getting that cost, we would ascertain in the best manner possible the cost of State and interstate business carried in the two classes of service; in that way getting away from any question of theory, but getting down to an application of the facts and of the testimony given in that case, and subsequently given in this case." (R. pp. 1002, 1003.)

Then Mr. Wharton explains generally the plan pursued, but before going to that we desire to call your attention to the evidence of the plaintiffs' witnesses which furnish authority for the primary bases of the State's plan.

As will be noticed in the cross examination of McPherson, Johnson and Kimbell and other witnesses for the plaintiffs, the State endeavored to obtain from them items susceptible of actual allocation, and, when not susceptible, to obtain some plan by which the particular

item could be approximately allocated between State and interstate. For instance, Messrs. Johnson and Kimbell were required to go over various items of revenue and expense and point out wherein they were capable of actual separation between interstate and intrastate, and numerous of them were found susceptible. (R. pp. 124-128, 164-168.)

But in the main these witnesses were hopeless as to a plan of actual separation other than the arbitrary revenue basis. Messrs. Doddridge and Rawn gave methods and factors which were afterwards used as the primary bases for reaching an actual separation of interstate and intrastate traffic and a method of ascertaining the extra cost was worked out; and to that testimony your attention is invited:

In Mr. Doddridge's cross examination this testimony was given:

"Take the St. Louis, Iron Mountain & Southern Railway alone; is not the traffic on that road the same kind of traffic, whether it is intrastate or interstate?

A. Yes, sir; it is the same kind of traffic.

Q. And take it on the Cotton Belt road; the traffic on that is the same whether it is interstate or intrastate; there is no difference in the traffic made by passing the State lines, is there?

A. Not a bit.

Q. That is the point.

A. That is correct.

Q. Your analysis of the different classes of freight, interstate and intrastate, is based on your experience and knowledge of the operation of the different kinds of trains, local and through, and the proportion of intrastate traffic carried on each, isn't it?

A. Well, the local train is simply one of the incidents of the extra cost. It is not the whole reason. It is one of the circumstances and conditions of the handling of the short haul business of the railroads.

Q. I think I have allowed for that in this question, if you will consider it more fully.

Previous question is here read.

A. Yes, sir.

Q. So we will understand terms correctly, Mr. Doddridge, in talking to each other, I will ask you if there is any such thing as an intrastate train; that is, an intrastate train which carries exclusively intrastate traffic?

A. There is no such train that I have ever heard of.

Q. There may be an intrastate train, but for the purposes of our inquiry it carries interstate traffic, and has to be considered relatively as to the traffic that is upon it.

A. It carries all kinds of business.

Q. That is true also of all trains, isn't it?

A. Yes, sir.

Q. Intrastate or interstate or transstate?

A. Yes, sir.

Q. It is a question of the proportion upon each?

A. It is a question of the proportion upon each.

* * * * *

Q. I call your attention to this testimony in the Missouri case, which is right in line with that:

'In view of the complicated situation as between through and way points and division points and State lines as they run, isn't it almost necessary to have the judgment of somebody who has practically operated the property itself and is familiar with it?

A. It would seem to me to be necessary to have that kind of judgment to get at anything like a close approximation.'

A. I endorse that.

Q. Is not the only difference in cost of the intrastate and interstate freight carried on the same train, the one of the extra terminals?

A. There is no difference in the cost of one kind of freight or another kind of freight, arising from a distinction in the terms 'State' or 'interstate.'

If the conditions are the same there would be no difference in the cost.

Q. Take freight carried on the same train?

A. Well, I say, if the conditions are the same; that is, the kind of freight, and all of the other elements that enter into it, there would be no difference arising from the terms 'State' or 'interstate.'

But the conditions must be the same to say that there would be no difference in the cost, because there might be a difference in the conditions. The character of the freight, the weight, and other things.

Q. Take it, the same kind of freight and of the same character, carried on the same train, where is the difference, except in the terminals.

A. There would be no difference in the train cost.

Q. I want to read you your testimony in the Frisco case: I wish to read this statement made in answer to a question:

'So far as the particular freight is concerned, carried on those particular trains, there would be no greater cost in transportation for interstate freight than State freight, except the terminal charge.'

In order to ascertain the results correctly, you would have to take into consideration the amount of State freight that is carried upon that train, as applied to the total State freight carried on the other train.

In other words, what I mean to say is, we have to take into consideration all the trains and find out what relation the State freight bears to the whole.' That is a correct analysis, isn't it?

A. Yes, sir; I think so." (R. pp. 484-486.)

Mr. Doddridge also worked out a method for ascertaining terminal expenses, both passenger and freight, between intrastate and interstate:

He says after testifying in the Missouri case he made further investigation and study of the problem and obtained further data from the Cotton Belt test, and decided that the best method would be to take the number of intrastate passengers for a given period and double them to compensate for the two station handlings and take the number of interstate passengers counted once, and, dividing the terminal expense in dollars and cents, it is an easy matter to arrive at extra cost per passenger or class of passengers. He says this would be somewhat more than fair to the State as some of the interstate passengers—the transstate—would have no terminal expense in the State, but this is the best method he knows. (R. p. 506.)

The unfairness to the interstate referred to would not exist in Arkansas on account of the large passenger traffic out and in Memphis and Fort Smith, charged with two terminal expenses; these, added to the many changes shown at Little Rock and other junction points of transstate and interstate passengers, would more than overcome the slight unfairness indicated by Mr. Doddridge to the interstate. On the freight side of the problem Mr. Doddridge says that the same method should be used to apportion terminal expenses between intrastate and interstate, using the ton as the unit instead of the passenger. The method is to double the intrastate tons and count the interstate once, and having all the terminal expenses in the State, then divide them in these proportions. (R. pp. 508-510.) He applies this formula for terminal expenses to the expenses of terminal buildings, fixtures, grounds and all terminal facilities. (R. p. 519.)

Mr. Doddridge, in applying his principles in illustration of extra cost of short-haul business, uses ton miles and passenger miles as a factor to measure terminal expenses, again making the same error heretofore pointed out in another connection. That, however, does not trench upon the principle he applies to terminal expenses.

The principle is thoroughly sound. The station expense is not increased or affected by length of haul—passenger or freight, or class of traffic—as the same kind of tons are uniformly found in interstate and intrastate traffic. These expenses are stationary, and result from handling the pound, the ton or the car at its origin and its destination, and therefore the expense should be apportioned in proportion that each ton has been handled. The State adopted this plan of Mr. Doddridge and much criticism was made of it on account of charging the transstate with one station handling as well as the interstate. The ton-mileage of the transstate is 51.16 per cent of all, but the transstate tons are one 33.61 per cent. (Exhibit 26, R. p. 2391). The double terminals increased on interstate in and out of Fort Smith and Memphis and the double and often treble terminal handling of interstate cotton, grain, lumber, etc., would more than

compensate for the 33.61 per cent of transstate, which received none according to plaintiffs' testimony. These elements offset the only injustice indicated by Mr. Doddridge as existed against his plan, which he presents as the best thought on the subject, and better than a plan he presented in the Missouri case (R. p. 506), and which he declares is a method of determining it "with fair accuracy." (R. p. 510.)

On maintenance-of-equipment Mr. Doddridge works out a method, practically, in principle, the same as that adopted by the State increasing the expenses by number of times the car is handled, length of haul, amount of terminal handling, etc. This is a car mile basis with allowances for extra switching and terminal handling. (R. pp. 510-514.) The details of this will be noted later.

Thus it is seen Mr. Doddridge furnishes a plan for train costs, terminal handlings and maintenance-of-equipment. Considering his great operating experience, his past service with these two roads and his advisory capacity to counsel in this and the Missouri case, his testimony on these lines should have great weight. It had great weight with the State's accountants, who used the bases indicated by him were the fair ones for these large items.

He evolved the "bridge theory" in this case, which the facts made ridiculous, but it was doubtless an ideal condition which he imagined exists because he thought it ought to exist, and he confounds ton miles and passenger miles with terminal expenses in arguing extra cost of intrastate. He finds from his bridge theory and this error of figuring extra cost, inflated ideas of extra intrastate cost; but when it comes to considering pure facts of operation and result of operation his views are worthy of the fullest consideration, and far above those of any other operating official who appeared in the case on account of his knowledge of these roads and his study of these problems.

Certainly it lies not with the plaintiffs to question their soundness.

In his direct examination Mr. Rawn, President of Chicago, Indianapolis & Louisville Railway, one of plaintiffs' witnesses, said:

"For the purpose of determining the cost of operation of transportation, the question of State and interstate is not the method of consideration. The method is that of the through and local business." (R. p. 676.)

In cross examination he explained somewhat in detail his method: Transportation cost, wages, fuel, supplies, etc., he says may be accurately ascertained from the books as to the cost of local and through trains. That these could be determined between the trains on the ton miles which is an absolutely accurate measure as between trains. This may be used on maintenance-of-way and maintenance-of-equipment, and between passenger and freight the train mile. (We believe he is the only witness on either side who advocated train mile division between freight and passenger although the railroads used it—to the

disadvantage of the State, as hereinbefore pointed out.) Station expenses he would divide in proportion to the traffic at each station between local and through trains. To illustrate, if 50 per cent was local and 50 per cent through at the given station, he would divide it in those proportions. (R. pp. 684, 685.)

Other than the revenue theory, the plaintiffs presented no method of dividing the expenses between State and interstate, but the foregoing testimony, giving practical lines for such division was developed from the plaintiffs' witnesses, and it alone should be sufficient to show that a better plan than the revenue theory was available, and until that better plan is adopted, the railroads have not made out their case by that clear and decisive proof which this court requires in order to procure an invalidation of State legislation.

The various factors used by the State, excepting their plan for general expenses, are factors in common use by the railroads in their every-day operation and accounting, and are each, as we believe, applied to the particular purpose for which that factor is designed.

These are tons, at stations, ton miles to apportion the cost of each train between intrastate and interstate, after the train costs of the train carrying it are found; the train mile to apportion expenses particularly applicable to the train as a unit, such as injuries to persons on track, signalmen, etc.; car miles to apportion expense of equipment between cars and also maintenance-of-way; passenger miles to serve the same office on passenger trains that ton miles do on freight trains. The uses of these factors in railroad operation and accounting is discussed at length by Mr. McPherson (R. pp. 305-307) and Mr. Doddridge to some extent (R. p. 534).

In applying these factors it may be useful to consider the classification of expense accounts as used in these exhibits; this brief statement is taken from a treatise on the subject:

"The operating expenses of almost all the railroads in the United States are classified according to rules prescribed by the Interstate Commerce Commission. The primary accounts are all embodied under five general accounts, as follows:

1. Maintenance-of-Way and Structures.
2. Maintenance-of-Equipment.
3. Traffic Expenses (*a new account*).
4. Transportation Expenses.
5. General Expenses.
 1. Under Maintenance-of-Way and Structures fall expenses for the repairs and renewals of machinery and tools, for repairs of roadway and track, for ballasting, for repairs and renewals of switches, frogs, ties, fences, bridges, culverts, stations, shops, buildings, etc.
 2. Under Maintenance-of-Equipment fall expenses for the repairs and renewals of locomotives, passenger cars, freight and other cars and of steamboats and for the maintenance of shop machinery, etc.

3. Under Traffic Expenses fall wages of officers directly in charge of traffic, freight, passenger, baggage and other agents, expenses of outside agencies, advertising, fast freight lines, etc.

4. Under Transportation Expenses fall wages of station employees, clerks, yardmen, flagmen, watchmen, enginemen and trainmen, expenses for telegraph and station service, cost of fuel and supplies for locomotives, expenses for water supply, loss and damage, etc.

5. Under General Expenses fall salaries of general officers and office clerks, expenses for legal service, insurance, etc."

The State decided to pursue the methods pronounced as the best thought on the subject by Mr. Doddrige, as they had this high author-

The Forming of Exhibit "I." ity and they accorded with the accountants' best judgment on the subject, and find the expenses of the local trains and the respective amount of intrastate and interstate freight carried on them and

the expenses of the through trains and the amount of intrastate and interstate freight respectively carried on them, and, in so doing, properly charge the local train with all the extra cost which the plaintiffs' evidence showed it should be charged with; that is, accepting the established items of extra cost, like extra switching service, etc., and find a basis for reaching the extent of it, and other established items, like higher wages, to ascertain the actual wages, and in this way find the exact cost of each train and the exact amount of each class of traffic on it. The idea was simply this: to bring it down to a single example to illustrate the whole.

A local train carries carload and L. C. L. from one end of its division to the other; it stops at every station; it makes various switch movements in dropping and picking up cars, both for itself and for the through; it handles at each station L. C. L. freight in packages. It is longer on the road, incurs greater wages to its crew; and its frequent stops and starts are fruitful sources of injury to equipment; switching is likewise a fruitful source of injury to equipment. The through train, under ideal operation, goes over the division without stops, save for water, passing trains and orders, and does not incur the switching movements. The through train carries on an average 33 cars and the local 16 cars and the former have an average of $4\frac{1}{2}$ more tons to the car. (R. p. 2516.)

It is apparent that the freight carried over this division on the local has cost more than that carried over it on the through train. It is equally apparent that the intrastate freight on the local has cost, for train expenses only, exactly the same as an equal amount of intra-state handled the same distance. The intrastate freight on the through train has cost exactly as much and no more for train costs as the interstate on it for the same number of tons and miles. Hence the expenses of each train must be ascertained and then those expenses apportioned between the freight carried on the train whose expense has been determined.

When the wages, fuel and supplies are actually ascertained on this local train, as was done by Mr. Kimbell on the Cotton Belt test and by Mr. Hamilton on the Iron Mountain test, then to it must be added the extra mileage it has made in switching, the injury to the way caused by the extra use of it by the locomotive, the attendant injuries from starting and stopping, switching and terminal work, to the equipment, and when all these elements are found, then the actual expense is found and its load must be ascertained and the expense assigned to it according as it has served the intrastate and interstate; and so similarly proceed with the through, but its total expense is simple and not complicated with those expenses peculiar to the local. The basis for dividing the costs of a given train between intrastate and interstate after they are found is necessarily the tons of each and the miles the tons of each class were carried by it.

Mr. McPherson says of the ton-mile basis: "It only attaches as a unit of measurement between two given points, the beginning and the end of the journey, but does not consider the expenses at either end of the road. It can not measure the expense at either end." (R. p. 315.)

But it can and does measure the expense of the journey—the train costs. For that purpose and that alone it is used. Say 50 per cent of the ton mileage of this train was interstate and 50 per cent intrastate; then so far as the cost of moving it is concerned, no one would question that these train costs ought to be equally divided between interstate and intrastate. Even Mr. Whitenton, who puts the extra cost of the local over the through and intrastate over the interstate in the superlative degree, admits that. (R. pp. 759, 760.) Mr. Doddridge says there is no difference in train costs. (R. p. 486.) Mr. Ward admits it. (R. p. 731.) Mr. Rawn says the ton miles would measure it with absolute accuracy. (R. pp. 684, 685.)

Instead of one local train and one through train to be thus simply worked out, the problem here, for one month only, was 1,116 local trains and 2,758 through trains. (R. p. 2518.) The total freight train costs for six months are nearly \$2,000,000 (R. p. 2531) out of a total of \$4,600,000. (R. p. 2307.)

It was therefore necessary to find the train costs of the local and through trains and the traffic of each class carried on each.

The Iron Mountain put in no statistics containing a separation of expenses of local and through trains nor a separation of the traffic carried on them. The Southwestern put in exhibits 19 and 20, containing results of their test month, October, 1908, which furnished the necessary data for that month and for the period if it be taken as representative of it. It became necessary to have similar data for the Iron Mountain. As heretofore shown, it was requested to furnish such statistics for a three-months' period, but declined, and stated they had prepared statistics of one month, which was a typical month and selected by it as such, and these statistics were fur-

nished and later introduced into evidence as exhibit 26. It was a statement of transstate, interstate and intrastate freight hauled during October, 1907; and that separated into carload and L. C. L. of each class; the revenue, the tons, the ton miles, length of haul, etc.

Mr. Wharton thus explains the necessity of further data and how it was obtained:

"Q. How did you proceed to carry out those plans?

A. The first thing that was necessary was to ascertain the movement of freight on local and through trains; also the car miles, engine miles, the train miles, and all such statistics in reference to the movement of freight on local and through trains, in order that the expense could be properly apportioned between the local and the through service and in order that the cost of that service might be apportioned between the State and interstate business moved in the two classes of service.

The Cotton Belt road had prepared statistics of that kind in a test they made in the month of October, 1908.

On the Iron Mountain it was necessary for us to prepare most of our own figures in that particular. The railroad company had prepared a statement showing in full detail the movement of freight during the month of October, 1907, and we—

Q. I want to identify that now, Mr. Wharton.

It is marked exhibit 26.

A. We did not work up the entire movement of all freight on all trains during that month but we worked up the movement of all freight on all of the local trains on the Iron Mountain during that month, and having that and the total movement of freight, the difference between the two was the movement on the through trains during that month.

Q. As I understand you, then, you accepted the Iron Mountain figures as to the total movement of the freight during the month of October, 1907, as shown in their exhibit No. 26?

A. Yes, sir.

Q. And started with that as your beginning point and then segregated the two classes of traffic by ascertaining the actual movement on all the local trains in the State of Arkansas during that month; was that it?

A. Yes, sir; that is correct.

Q. Do you mean the Iron Mountain in Arkansas and not the entire system?

A. Yes, sir; the Iron Mountain in Arkansas.

Q. Mr. Wharton, explain the method of working up that, without going into detail. I understand Mr. Hamilton knows that better than you do, but explain the plan and how it was carried out.

A. The detail I am not familiar with.

The plan of the work was to take the wheel reports, list of the car numbers, and get the waybills, I believe, showing the freight moving in those cars.

Q. You mean from the records of the Iron Mountain Company?

A. Yes, sir; it was all worked up from the records of the Iron Mountain Company.

Q. Just explain what records and where you found that?

A. I would rather have Mr. Hamilton do that. I made up the plan.

Q. That plan was carried out by others, under your general direction and co-operation?

A. Yes, sir.

Q. Now, Mr. Wharton, have you that statement as worked up?

A. Yes, sir.

Q. I wish you would present it and file it as exhibit "I." (R. p. 2516.)

Q. Mr. Wharton, please take that exhibit 'I' and explain it?

A. The first column in exhibit 'I,' the one marked 'local trains,' contains the statistics worked up by us under Mr. Hamilton's personal direction. The last column marked 'total' contains the total statistics shown in exhibit 26 and in some of the other exhibits filed in this case—I will take the last part of that out—some of these are not shown in the exhibits in the case.

All of the figures in the 'total' column were obtained from the books and records of the St. Louis, Iron Mountain & Southern Railway Company, except the percentages and averages worked out.

Q. The totals there of ton miles were taken from exhibit 26?

A. Yes, sir; from exhibit 26, the mileage statistics as to car miles, caboose, engine and train miles, were taken from the records of the railway company for that month.

Q. Now proceed with your explanation of it.

A. The second column marked 'through trains' is the difference between the column marked 'local trains' and the one marked 'total,' with the exception, of course, of the percentages and averages, which were worked out from the figures in those columns.

The first section of the statement shows the ton miles of freight carried during the month of October, 1907, divided between local trains and through trains.

Following that we have the ton mileage of each class of freight expressed in percentages.

Following that are mileage statistics and other statistics as to train movement and car movement.

Q. Mr. Wharton, I wish you would state what you found in that test of the loading of the local trains as between State and interstate, expressed in percentages?

A. We found from that that the loading of the local trains was 71.49 per cent interstate, and 28.51 per cent State, based on the ton miles carried.

Q. What was the loading of the through trains?

A. The through trains were loaded 94.41 per cent interstate and 5.59 per cent State.

Q. What did you do with the company freight in that case?

A. We originally worked up some statistics on the company freight but finally excluded them from this statement.

Q. This is the revenue freight?

A. This is simply revenue freight. My recollection of the company freight is that a larger proportion, in proportion to the total freight handled, is handled on local trains than on through trains.

Q. I see you have here 'Number of cars handled in and out of terminals where yard engines are maintained'; I wish you would explain those figures?

A. The instructions in relation to working up the cars handled in and out of terminals by local and through trains were that the wheel reports were to be taken and the total cars shown by that wheel report as going into the terminal were to be accounted as going in and the total going out of that terminal was to be accounted as going out. The figures are made up in that way, classifying the wheel reports as between local and through." (R. pp. 1004, 1005.)

Mr. Hamilton explains at great length and in detail how he and a force under him worked up the detail comprising exhibit "I." (R. pp. 1408-1425.) It was a herculean task of tracing 20,835 cars, ascertaining the tonnage of each, the waybill for each, and all data concerning the contents and movement and expense of each of these 20,835 cars, but it was so well done that after months of investigation by Mr. Roth and a force under him, errors were found amounting to \$257.68, and that in favor of the interstate. (R. p. 2256.)

In this way exhibit "I" was brought into the case, used and tested and found accurate.

There were no records kept by which it could be ascertained whether a passenger traveled on a local or through train, and hence it was impossible to have divided expenses between *Passenger Traffic* the interstate and intrastate by trains, even if it had been the proper course, but in this case that would not have been worth while, even if possible.

On the St. Louis Southwestern Railway Company all the passenger trains in Arkansas are local trains (R. p. 167, and time card exhibit 25). On the Iron Mountain there are 48 local passenger trains and 8 through passenger trains. (Exhibit 46, R. pp. 2412-2430.)

It has heretofore been shown that many of the locals carry Pullmans and one of the through trains is a fast mail, carrying one Pullman and no other passenger equipment. The primary division and essential division on the passenger side is that between passenger traffic and mail and express. The principles applied in the freight side, so far as applicable, are used to separate the passenger from the mail and express, and when that is done, then to divide train costs on passenger mile basis and then divide terminal expenses on the passengers of each class, doubling the number of intrastate pas-

senger so as to charge the intrastate passenger traffic with two terminals to one of the interstate.

THE DETAIL OF THE STATE'S PLAN.

The following explanation of the detail of the State's plan of dividing expenses are practically the same as those found in the exhibits, but are, in some instances, amplified, and are given without the figures and calculations, and it is hoped in that way the plan may be presented in a more connected way than in following it through the exhibits, which are necessarily encumbered with the amount of each item given, and the result of the calculations and percentages used, etc.:

STATEMENT "A"—FREIGHT.

I—MAINTENANCE-OF-WAY AND STRUCTURES.

The proportion of these expenses applicable to the freight business, as shown by the statements in this case, submitted by the company, has been divided between local and through train service on the basis of the total engine and car miles of each class (see exhibit "I") during the month of October, 1907, that month being considered representative of the business for the six months ended December 31, 1907.

The car miles and engine miles (with engine miles reduced to a car-mile basis, as explained hereinafter) have been used as factors on which to divide these expenses between local and through freight trains, because they are the factors which most nearly represent the actual use made of the way and structures that these expenses are incurred to maintain.

The engine mileage shown in exhibit "I" is the actual road mileage, exclusive of switching at stations where no special engines are maintained for switching service. The local freight train engine performs the switching service at such stations and the mileage made by it in such switching adds 50 per cent to its straight road mileage. Therefore, in order to charge each class of freight train engine, local and through, with the actual use made by it of the track, expressed in miles run over the track, 50 per cent has been added to the road mileage of local freight train engines shown in exhibit "I."

It has been assumed that the average freight engine mile is the equivalent of $2\frac{1}{2}$ freight car miles in its effect upon maintenance-of-way expenses, and in order to arrive at a common unit for a division between local and through trains, of these expenses, the engine miles of each class of trains, ascertained as stated in the foregoing paragraph, have been multiplied by $2\frac{1}{2}$, thus reducing them to the basis of car miles.

II—MAINTENANCE-OF-EQUIPMENT.

A. Locomotives.

The expenses under this head are divided between yard and local and through road locomotives on the basis of the locomotive mileage of each class during the month of October, 1907.

Fifty per cent has been added to the mileage made by yard switching locomotives to provide for the extra maintenance expense resulting from the character of the service in which such locomotives are employed, as compared with the service rendered by road locomotives in pulling trains between stations.

The local freight train locomotives perform the switching service at stations where no yard locomotives are maintained and the mileage made in this switching service adds 50 per cent to their straight road mileage. This switching mileage is service of the same character as that performed by yard locomotives and entails 50 per cent additional maintenance expense per mile as in the case of yard engines. Therefore, to cover the switching mileage of local freight train locomotives, 75 per cent has been added to the straight road mileage of such locomotives shown in exhibit "I."

It has been assumed that through freight train locomotives perform no switching service.

The mileage of the three classes of locomotive service having been equalized by the addition to yard and local freight train service of percentages representative of the extra maintenance expense of each, the mileage figures so obtained have been used as factors on which to apportion the total expense of locomotive maintenance charged to freight service.

Yard locomotives render service to local and through freight trains, assembling and distributing cars, received at or forwarded from the various terminals in both classes of trains and accordingly the expense of yard locomotive maintenance ascertained, as stated above, has been divided between local and through trains on basis of the number of cars hauled into and out of terminals by each class of train.

II—MAINTENANCE-OF-EQUIPMENT.

B. Freight Cars.

The total amount of expense for maintenance of freight cars is \$477,895.64. This amount is apportioned to Arkansas by the railway company on a car-mileage basis.

The total amount of expense for maintenance of freight cars apportioned to Arkansas by the railway company on a car-mileage basis. In dividing this expense between local and through service, however, we have taken into consideration the element of repairs due to the stopping and starting of trains at way stations, and repairs due to

extra terminal handling of cars in local service. Mr. A. M. Wellington, in his work on "Railway Location" (page 203) says that the stopping and starting at way stations is the cause of approximately 21.5 per cent of the repair expenses of freight cars, and that the terminal handling is the cause of approximately 13.5 per cent of the repair expenses. Taking these elements into consideration, the maintenance expenses may be divided first into starting and stopping 21.5 per cent, terminal handling 13.5 per cent, and other 65 per cent.

In dividing the expense chargeable to "stopping and starting," between local and through trains, it has been considered that the local train stops every five miles and the through train every 20 miles, and that therefore the cars in the local train would receive four times as much damage per mile run, from this cause, as the cars in the through train. Accordingly, the actual car mileage of local trains has been multiplied by four and the resultant figure used as one factor in dividing this portion of the expense, the other factor used being the actual car mileage of the through trains.

In dividing the expense chargeable to terminal handling consideration has been given to the greater number of such handlings received by cars in local trains as compared with cars in through trains. On the St. Louis, Iron Mountain & Southern Railway in Arkansas the average run of a local freight train very closely approximates the average run of a through freight train and it has been assumed that a local train would set out during its run all the cars it had taken out of its originating terminal and pick up a car for every car it set out, making two handlings between terminals for every car in the local train as against no such handling for cars in the through train. Multiplying the car miles in local trains by two results in a figure which, when used with the actual car miles of through trains as the other factor, produces percentages which exactly represent the proportion chargeable to each class of train, of the total number of terminal handlings received by freight cars.

The expense of freight car maintenance, due to all causes other than stopping and starting and terminal handling, is divided between local and through trains in proportion to the number of car miles in each class of train.

II—MAINTENANCE-OF-EQUIPMENT.

(C)—Supervision.

This expense is incurred in supervising the expenditure of the amounts apportioned between local and through trains under the heads of Maintenance-of-Locomotives and Maintenance-of-Freight Cars, and has been divided between local and through freight trains on basis of the results of the apportionment, of the direct charges for maintenance-of-equipment.

III—TRAFFIC EXPENSES.

These expenses are incurred in securing and looking after traffic, and have been divided on a gross revenue basis, although this unduly burdens the intrastate business, owing to the fact that a considerable portion of the traffic expense is incurred in the effort to secure competitive business, while the intrastate business is largely noncompetitive.

IV—TRANSPORTATION.

(A)—Station Expenses.

These expenses can not be divided between the two classes of train service, as they are not train expenses. They have been divided directly between intrastate and interstate business on the basis of the number of tons of each class of traffic handled in the State, assuming, however, that each intrastate ton was handled twice and each interstate (including transstate) ton once.

IV—TRANSPORTATION EXPENSES.

(B)—Yard and Terminal Expenses.

Yard and terminal expenses are incurred in assembling and distributing cars received at or forwarded from the various terminals in both local and through trains, and expenses have been divided between the two classes of trains on basis of the number of cars hauled into and out of terminals by each class.

IV—TRANSPORTATION EXPENSES.

(C)—Fuel and Locomotive Expenses; Road.

According to a test made on the St. Louis Southwestern Railway in Arkansas during the month of October, 1908, the local engines consumed $3\frac{1}{2}$ per cent more fuel per engine mile than the through engines. Assuming that the same conditions would prevail on the St. Louis, Iron Mountain & Southern Railway, during October, 1907, the fuel and the miscellaneous locomotive expenses would be divided between local and through service.

IV—TRANSPORTATION EXPENSES.

(D)—Engine House Expenses; Road.

The average run per trip of an engine in through freight service being approximately 12 per cent longer than the average run per trip of a local freight train engine on the Iron Mountain in Arkansas, the local engine would get into the engine house more times, *per mile run*, than the through engine. It has been assumed in dividing this expense that the local engine gets the same attention in the engine house each trip as the through engine, and to equalize the

disparity in engine house service (due to the shorter run of the local engine and its consequent more frequent use of the engine house *per mile run*), 12 per cent has been added to the mileage actually made by the local engines in October, 1907. The figure thus obtained and the actual mileage of through train engines have been used as factors to divide the engine house expense for the six months' period between the two classes of trains.

IV—TRANSPORTATION EXPENSES.

(E)—Road Enginemen and Trainmen.

An actual division of these expenses for the month of October, 1907, was made from the company's time books.

IV—TRANSPORTATION EXPENSES.

(F)—Other Train Expenses.

These expenses are all of those not included in the preceding classifications which are incident to or caused by the operation of trains, such as the expense incurred for watching crossings, signaling, clearing wrecks, stock killed on right-of-way, etc. They have been divided between local and through trains in proportion to the train miles of each class of service, during the month of October, 1907.

IV—TRANSPORTATION.

(G)—Loss and Damage—Freight.

The expenses under this head are divided between intrastate and interstate business on the basis of the actual claims paid during the month of October, 1907.

IV—TRANSPORTATION EXPENSES.

(H)—Supervision.

These expenses are incurred in superintending the operations of the transportation department of the railway, and the direct expense of such operations is the best measure of the supervision necessary for each. Accordingly, the expenses of supervision have been divided between local and through trains and intrastate and interstate business, on basis of the apportionment, to each, of all the other expenses of transportation.

V—GENERAL EXPENSES.

The business of a railroad consists of the production and sale of transportation. The expenses incurred in the general supervision of such production and sale and the accounting therefor are classified as general expenses. They necessarily bear a direct relation to the expenses of production and sale and should be apportioned to the various classes of traffic in proportion to the direct cost thereof.

VI—TOTAL OPERATING EXPENSES.

Total operating expenses are divided between local and through train service, and intrastate and interstate traffic.

The train costs include everything relating to the direct cost of the movement of freight trains, with all expenses incident to such movement. Station expenses and other items which do not affect the expense of train movement are divided between intrastate and interstate business direct.

VII—METHOD OF DIVIDING TRAIN COSTS.

During the month of October, 1907, 39.10 per cent of all intrastate ton miles and 8.70 per cent of all interstate ton miles of freight were handled on local trains; and 60.90 per cent of all intrastate and 91.30 per cent of all interstate ton miles were handled on through trains. Assuming that these same relative conditions would exist during the six months ended December 31, 1907, the total ton miles of intrastate and interstate freight handled during that period would have been divided between local and through service.

Train costs are divided between intrastate and interstate business in proportion to the volume of traffic of each kind handled in each class of service.

STATEMENT "B"—PASSENGER.

As nearly all passenger trains on the St. Louis, Iron Mountain & Southern Railway in Arkansas do a local business, no division of expenses has been made on the statement as between local and through trains. The statement divides expenses between, coach service and Pullman service, their auxiliary car service (baggage, diner and cafe observation), and intrastate, interstate, mail and express business. The expense of baggage, diner and cafe observation car service, operated for the use of both coach and Pullman passengers, is subdivided on the statement between coach and Pullman service on basis of the passengers carried one mile in coaches and Pullman cars. The statement divides the total cost of the coach and Pullman service between intrastate and interstate business on basis of passengers carried one mile in coaches and Pullman cars, respectively, and adding the results of this division to the direct intrastate and interstate expenses, it arrived at the total cost of intrastate and interstate passenger business.

As the primary division of expenses has not been made as between trains (for the reason stated in the second paragraph hereof), but between the classes of cars hauled in the trains, all expenses of or incident to locomotives have been considered as common to all the classes of cars hauled in the trains and have been apportioned to the various classes of cars on basis of the car miles made through the instrumentality of the power furnished by the locomotives.

With a few exceptions, which are explained in the accompanying memoranda, the car mile is used as the basis for dividing expenses between the various services of the passenger business, viz.: passenger carrying, and mail and express. As passenger equipment mileage varies but little, if at all, from month to month, October, 1907, mileage has been taken as representative of the mileage of the six months' period of which it is a part, and has been used as the basis for division of the expenses of the six months' period under review.

The totals of the passenger expenses, under the various classifications, which have been divided in the manner set forth above, are the amounts apportioned to the passenger business of Arkansas by the railway company, in the figures which it has submitted in the railroads' exhibits.

The inclusion of baggage, diner and cafe observation cars is not in the original exhibits. Heretofore has been explained an error in this connection, and this statement correctly states the plan of division, and following it the intrastate would be reduced about \$29,000. The error and its correction is explained at R. pp. 2288, 2289.

I—MAINTENANCE-OF-WAY AND STRUCTURES.

The proportion of these expenses for the six months ended December 31, 1907, charged to the passenger service in Arkansas by the railway company, has been divided between the various classes of cars hauled in passenger trains on basis of the car miles of each class.

II—MAINTENANCE-OF-EQUIPMENT.

(A)—Locomotives.

The proportion of these expenses for the six months ended December 31, 1907, charged to the passenger service in Arkansas, by the railway company, has been divided between the various classes of cars hauled in passenger trains on basis of the car miles of each class during October, 1907.

II—MAINTENANCE-OF-EQUIPMENT.

(B)—Passenger Train Cars.

No expense for the maintenance of Pullman cars is included in these figures, as all such cars are repaired by, or at the expense of, the Pullman company and without cost to the railway company.

The proportion of the expenses of maintenance of coaches, baggage, dining cafe observation, mail and express cars for the six months ended December 31, 1907, charged to Arkansas, by the railway company, on a car mile basis, has been divided between the various classes of cars on basis of the car miles of each class during October, 1907.

II—MAINTENANCE-OF-EQUIPMENT.

(C)—Supervision.

This expense is incurred in supervising the repairs of locomotives and cars in passenger train service, the expense of which has been apportioned, on the statement, between the various classes of cars composing the trains. These directly apportioned expenses have been used as bases for the division of the supervisory expense incurred in connection with the repairs, the cost of which they represent.

III—TRAFFIC EXPENSES.

These expenses are incurred in securing and looking after traffic, and have been divided between intrastate and interstate passenger business and mail and express on basis of the gross earnings of each for the six months' period. This unduly burdens the intrastate passenger business, owing to the fact that the major portion of traffic expense is incurred in the effort to secure competitive business, while the intrastate business is largely noncompetitive.

IV—TRANSPORTATION EXPENSES.

(A)—Station Expenses.

Divided between intrastate and interstate business on the basis of the number of passengers of each class handled, after making an allowance of about 10 cents per day for the handling of mails at certain stations; and assuming that each intrastate passenger makes use of two terminals and each interstate passenger makes use of one terminal.

Included in the 257,950 interstate passengers, charged with one use of a station in Arkansas in the above division of expense, are the transstate passengers, who it has been claimed by the railway company would get no use of the stations. On the other hand, owing to the peculiar location of the Iron Mountain line into the city of Fort Smith, and the fact that Memphis station expenses are charged to Arkansas, the interstate passengers from or to the two cities mentioned make use of two stations, the expense of which is charged to Arkansas, and transstate passengers to or from Memphis would use one station, the expense of which is charged to Arkansas. No additional use of stations has been charged to this interstate traffic in the division of these expenses, and it is believed that this will more than compensate for any burden placed on the transstate traffic by charging all passengers of that class with one use of a station in Arkansas. In addition to these reasons, the few transstate trains run through the State will necessitate transstate passenger net on those trains to use stations service and also necessitate many interstate passengers to use more than one station service in the State.

IV—TRANSPORTATION EXPENSES.

(B)—Yard and Terminal Expenses.

These are the expenses incurred in running passenger train cars over the road in trains, and the cleaning, switching, and other care of them at terminals at the completion of each run to prepare them for their next run.

The expenses of this character for the six months ended December 31, 1907, charged to the passenger service in Arkansas, by the railway company, have been divided between the various classes of cars hauled in passenger trains on basis of the car miles of each class during October, 1907.

IV—TRANSPORTATION.

(C)—Loss and Damage—Baggage.

These expenses have been divided between intrastate and interstate business in proportion to the gross earnings of each.

V—TOTAL OPERATING EXPENSES.

The total operating expenses are, as hereinbefore explained, divided between baggage, diner and cafe observation, coach, Pullman, intrastate, interstate, mail and express business. The amounts charged to intrastate and interstate business are expenses not chargeable to the cost of train service. The expenses charged to mail and express business represent the total operating expenses assignable to those two classes of business. The expenses charged to baggage, diner and cafe observation, coach and Pullman service represent the proportion of train expenses assignable to the hauling of passengers.

VI—DIVISION OF BAGGAGE, DINER AND CAFE OBSERVATION COSTS BETWEEN COACH AND PULLMAN PASSENGERS.

The cost of baggage, diner and cafe observation service, \$211,097.20, has been divided between coach and Pullman passengers, for the use of whom these auxiliary service cars are operated, on basis of the passengers carried one mile in coaches and Pullmans during October, 1907. Exhibit "56-A," filed by the railway company, shows that of the total passenger miles during October, 1907, 1,936,121, or 15.41 per cent, were carried in Pullmans, and 10,630,277, or 84.59 per cent, were carried in coaches. These percentages have been used in dividing the expense of baggage, diner and cafe observation service between the coach and Pullman services.

The result of this plan shows a return of 7.69 per cent on the property devoted to intrastate traffic, exhibits at page 2540, on the Iron Mountain; and, after correcting the error as to the Pullmans, reduced to 7.09 per cent. This upon the revenue basis of dividing property, which is unfair to the State, as the intrastate freight reve-

nue is 98.16 per cent higher than interstate, and passenger 3.48 per cent higher, and includes also the unfair train-mile basis, which assigns to intrastate traffic \$101,500 more than if the revenue basis had been used for this item. It also includes both Memphis and Fort Smith terminal expenses and is infected with the many other errors discussed in that chapter. Undoubtedly under any sort of fair adjustment of these matters the intrastate is certainly earning more than 8 per cent on the property. Under the same plan, without any of the suggested matters regarding the Iron Mountain, the St. Louis Southwestern is shown to be earning 9.16 per cent on its property devoted to intrastate traffic.

This plan of dividing expenses and the results reached by it, are sustained by a decided preponderance of the evidence.

If the evidence supporting it was sufficient to cast doubt on the revenue basis and the other methods pursued in the plaintiffs' exhibits, then it would have accomplished its purpose as preventing the railroads' case being proved by that clear and decisive proof necessary to invalidate State legislation. But, as we will show, it goes further, and is sustained by a decided preponderance of the evidence; using that term in its best sense; not in number of witnesses only, but in witnesses least interested and best qualified to speak on the particular subject of the testimony.

THE STATE'S PLAN AS A WHOLE.

The plan as a whole was discussed and sustained by the following witnesses: T. F. Wharton, accountant (R. p. 1000); Herbert C. Whitehead, formerly Auditor of Santa Fe System (*The State's Evidence*, p. 1075); W. E. FitzGerald, Auditor of Texas Railroad Commission, a former railroad accountant (p. 1080); Henry Willmering, Auditor Oklahoma Corporation Commission (p. 1111); R. D. Parker, Engineer, Texas Railroad Commission (p. 1161); Charles S. Ludlam, railroad auditor and railroad accountant (p. 1309); T. A. Hamilton, railroad accountant (pp. 1402, 1520); Conway W. Hillman, railroad auditor and accountant (p. 1479). In all eight witnesses. That they discussed it intelligently and with knowledge of the subject can not be gainsaid. Messrs. Wharton, Ludlam and Hamilton were employed by the State to ascertain the facts of this case and their testimony should be scrutinized for bias or partizanship. Messrs. FitzGerald and Parker are public officers of the State of Texas. Their State has no litigation with the railroads and is striving as best it can to gather all the light and data possible upon these problems. Their freedom from interest, bias or partizanship is apparent from reading their testimony. Mr. Whitehead is a totally disinterested witness, called upon to give the benefit of his experience and learning on these subjects. Mr. Willmering has no interest in this case, but his State has a rate case with these same railroads, and, notwithstanding he is a

public officer, it is right to consider any bias on this account. Mr. Hillman is employed by other States with similar litigation. Three of the eight witnesses are entirely removed from possible selfish interests. The plan as a whole was discussed and condemned by M. L. Byers, Chief Engineer of Maintenance-of-Way of Missouri Pacific and Iron Mountain System (p. 1695); Frank Nay, Comptroller of Rock Island System (p. 1812); Frank E. Ward, Manager Burlington System (p. 1853); Carl Gray, Vice President St. Louis & San Francisco Railroad Company (p. 1893); Fred P. Johnson, Accountant of the Iron Mountain Railway Company (p. 1981). In all five witnesses. Of these, Messrs. Byers and Johnson are employees of the Iron Mountain; Messrs. Gray and Nay are officers of two roads which secured injunctions with these roads (R. pp. 73, 81), which are practically parties to this litigation, and their roads have similar litigation with Missouri and Oklahoma; Mr. Ward's road is not a party to this litigation, but is to the Missouri and Minnesota rate litigation. Mr. Ward has the same indirect interest which may be imputed to Mr. Willmering. On the score of interest, the State has the best of it.

While interest is a recognized canon of guidance in weighing evidence, we take pleasure in saying that in this case, only so far as environment and point of view is concerned should any discount be made of the testimony of any witness on either side.

One of the few statements of the opinion of Judge Trieber which meets with our full concurrence is this:

"In this connection it is but proper for the Court to say that all the witnesses in these cases impressed the Court as having testified as intelligently and as fairly as is possible. It is true they differ widely in their views, but it is an acknowledged psychological fact that the opinions entertained for years by a man can not be discarded at once, and that all persons are to a certain extent influenced in their views by their environments, as well as the duties they are called upon to discharge for others." (R. p. 2620.)

In view of the high order of the witnesses, their intelligence and grasp of the subject, then even numbers may properly be considered in testing where the preponderance lies. Take such men as Mr. Nay and Mr. Johnson, accountants of ability and character, but their lives devoted to seeing these questions from one standpoint. And contrast them with Messrs. Ludlam and Fitzgerald. They have had the railroad experience to equal Messrs. Nay and Johnson in the grasp of the questions, and their work has carried them into broader fields where these subjects may be viewed from many angles—not one.

Much stress was laid in testimony and argument on the superior ability of operating officials to pass judgment on these questions. That operating officials can better pass judgment on questions of operation is readily granted, but that they can pass better judgment on the subject of a fair and accurate apportionment of expenses be-

tween State and interstate traffic than auditors and accountants is emphatically denied.

Every one who has touched the subject says that in operating trains State lines are not considered; it is with the operating man a question of through and local trains and the intrinsic character of the freight hauled and not the legal status of it which is intangibly stamped upon it. He is concerned in the delivery of the freight to the end of his division or its terminal or to a connecting carrier, and it boots not him where it originated or is destined so long as it is properly handled on his division or his road.

The comparative qualifications of the operating men or the accountant to pass judgment on a proper method of apportioning these expenses was discussed by several witnesses on both sides, and we submit this excerpt from Mr. Ludlam's testimony as stating the proportion most convincingly:

"Q. Some questions have been asked from other witnesses, indicating that an accountant would have to be an operating man in a particular business, before he could install a cost accounting system for that particular business:

What is your view about that? What has your experience taught you in regard to that matter?

A. My judgment is that the operating man, as a general proposition, is the last man who is able to figure out his own cost; that is done by the accounting department and by the various cost departments of the different manufacturing concerns.

Naturally, in installing a system of cost, we would confer with the operating man and familiarize ourselves with the operating transactions sufficiently to be able to devise forms and install systems that would take care of all the operating transactions, but we would never depend upon the operating man's opinion of what it cost him.

Q. If an operating man installed the system, the accountants would go out of business?

A. I think also the operating men would go out of business.

There is nothing that is more generally recognized, I think, and coming to be recognized more and more every day, than the absolute importance of separating the operating and the accounting departments, particularly in railroads.

I can remember back in my day when the General Manager would instruct the Auditor how to charge certain expenses, but the financial interests, in so far as they control railroad accounting and railroad investments, have learned that it is imperative that the accounting officer should act exclusively on his own responsibility and be accountable only to the Board of Directors of the corporation, if you want to know the actual facts as to the result of operating the property.

Any operating man could make a very fine showing for his property if he was allowed to direct how the different items should be charged.

Q. Explain why that is, particularly in railroad operation.

A. In order to ascertain the true results, the further you can separate the ascertaining of those results from the man who would be interested in the results shown, the more accurate your results will be, naturally.

Q. Then your object is to get actual conditions and apply your accounting knowledge to those conditions to properly apportion your expense?

A. Yes, sir." (R. pp. 1312, 1313.)

But it matters little to the State which view is accepted, its plan of work is the result of the views expressed by operating men in the Missouri case and in this case, which were applied by Mr. Wharton and find expression in the State's plan. (R. p. 1023.)

The plaintiffs have laid much stress upon the opinions of Messrs. Gray and Ward, both successful operating officials, but if this issue is to be controlled by the opinions of these operating officials, the plaintiffs' case is destroyed by their views. Both condemned the train-mile and car-mile bases as not sufficiently accurate for so important subject as determining rates.

The railroads' exhibits relied upon to show the return on the property to be confiscation, use both these bases—the train mile to apportion passenger and freight (to the detriment of the State compared with revenue basis in the bagatelle of \$101.500), and the car mile to apportion the freight and passenger equipment expense between Arkansas and the eight other States composing the Iron Mountain System, resulting in one million dollars being apportioned to Arkansas. It takes the use of both these bases so heartily condemned by these eminent operating officials to bring about the confiscatory return relied on in their exhibits.

Mr. Gray also estops the plaintiffs from questioning the accuracy or representative character of the test month statistics, and, with these accepted, the plaintiffs' case is destroyed without more ado. Furthermore, Mr. Gray says the last six months of 1907 were not "representative enough to apply to a period of years, either before or since." (R. p. 1933.) Therefore, if plaintiffs' argument is followed and these eminent operating officials' opinions are to control, they necessarily walk out of court without relief, as they have not used proper bases to show themselves entitled to relief.

Mr. Doddridge works out the solution of freight train costs, terminal expenses, freight and passenger, and maintenance-of-equipment expenses. There can be no serious controversy over maintenance-of-equipment, as both sides use the car-mile basis for it; the railroads to find the apportionment between Arkansas and the other eight States composing the Missouri Pacific System and the State as between local and through freight trains and coaches and mail and express cars. Mr. Rawn approves the car mile for maintenance-of-way and maintenance-of-equipment. There can be no reasonable

doubt of the car mile or wheelage basis for maintenance-of-way as it is the basis commonly used by the railroads themselves in dealing with each other on this subject. These four great items are practically the whole problem, both in principle and dollars. Certainly the plaintiffs have presented no operating men of greater experience and ability than Messrs. Doddridge and Rawn.

The State's plan, and the evidence supporting and condemning it, can not be grouped other than by discussing each of the subjects.

MAINTENANCE-OF-WAY.

This item of expense is divided on the car mile, formerly called wheelage, basis. The origin, and change in name of this basis, may

Car-Mile Basis. be found in Mr. Gray's evidence (R. p. 1937), Mr. Hillman's (R. p. 1487) and Mr. Nay's (R. p. 2043).

The straight car mileage is used on the passenger side between coaches, mail and express. On the freight side the division of expense was on the car-mile basis between local and through freight trains with these additions: Each engine is counted as doing two and a half times more injury to the way than a freight car and the engine mileage increased accordingly.

To the engine of the local train is added 50 per cent to its mileage on account of switching done at stations, thereby to that extent using the way that much the more than if it had made a straight run.

The discussion brought up three questions: (1) The basis used and (2) the allowance for locomotive wear over car wear, and (3) the allowance of 50 per cent of the local engine mileage for station switching.

(1) As to the basis used:

Mr. R. D. Parker, Expert Engineer for the Texas Railroad Commission, is an educated engineer, and has been in the service of the Texas Commission eight years; prior to that he was in railroad construction and maintenance-of-way work, and when he went to the Commission was in charge of 600 miles of line, and had under his supervision maintenance-of-way, bridge and track work. (R. p. 161.) He is familiar with the bases and units used in apportioning expenses of maintenance-of-way, maintenance-of-equipment and other railroad accounts. Regarding the car mile as the basis of dividing maintenance-of-way expenses between local and through trains and passenger and mail and express cars, he says:

"To my mind, it is about as representative unit as could be applied; that is, a unit that is representative of the service." (R. p. 1162.)

Mr. Willmering was questioned as to this item of expense and this occurs:

"Q. Speaking of the freight traffic, I believe you say you would make it upon the car mile; I would like for you to give your reasons why you think that would be better?"

A. I would give it upon the car mile, for, from observation, I find that oftentimes a local freight train would pull more cars, have more cars in the train, than the following through freight train, and I find it vice versa, and, in order to get a fair average, I believe that car mile should be taken in place of the train mile.

Q. You think it is nearer the actual results than the train mile?

A. Yes, sir; in my judgment." (R. p. 868.)

Mr. Wharton says:

"It was our idea, after considering the matter, that a car mile, as between local and through, would more nearly represent the difference in costs.

Q. What was the reason for that?

A. On account of the difference in the two classes of trains, local and through; and the difference in the cars they carry, and the number of cars in the train." (R. p. 1032.)

Mr. Wharton says that personally he would have preferred the gross ton mile, but the data was not available and he used the best method which was available. (R. p. 1007.)

Mr. Fitzgerald said that the car and engine mileage is the closest approximation which can be reached for maintenance-of-way expenses, and it is the generally accepted basis for this purpose. (R. p. 1082.)

Mr. Ludlam says:

"We considered that the engine and car miles represent more correctly than any other ascertainable quantity, the use which was made of the track; the use which was made of the property that these expenses represent the cost of maintaining.

Q. There has been evidence in this case to the effect that a large part of that item of expense is due to the elements, wind and water; matters with which the actual operation of the road is not concerned—the actual running of trains is not concerned in the operation of the road, I mean.

What do you say to the justice of dividing those expenses that are not caused by the running of trains, on a car mile basis?

A. I think it is entirely equitable and proper. The question of whether the actual running of trains wears the tracks out, or whether the elements wear the tracks out, and the other property that is put there for the operation of trains, is immaterial. You have to charge the expense which is incurred for the use for which it is incurred. They maintain the track and maintain the property in order that trains may be operated over the property, not on account of the weather or elements wearing the property out. They don't repair it merely to replace the wear and tear of time or the elements, but they do it in order that they may operate trains.

Q. That roadbed is not there for ornamental purposes?

A. No, sir. It is exactly the same as in a case, for instance, of a chair factory: when you would have to repair the roof on a chair

factory it is an expense incurred which you would apportion to the cost of the chairs manufactured in that building, although, as a matter of fact, the actual making of a chair in that building has nothing to do with the wearing out of the roof. But it is a part of the cost of maintaining the property and you charge that cost to the use which is made of the property. That is an ordinary accounting principle.

Q. Is that a principle that is recognized by accountants generally and railroad accountants in the working out of accounting systems and properly distributing costs?

A. Yes, sir." (R. p. 1322.)

Mr. Hillman says that the car mile is the generally accepted basis among railroads for apportioning maintenance-of-way expenses where there is joint use of tracks. (R. p. 1486.)

On cross examination Mr. Hillman said that for a division between either freight and passenger or local and through trains, he considered a basis of car weights better than either train mile or car mile. (R. pp. 1509, 1510.)

The Iron Mountain leased of the St. Louis Southwestern Railway trackage rights from Paragould, Arkansas (it is 36 miles in Arkansas; distance in Missouri not given.) (R. p. 1000.)

Car Mile In Use by Plaintiff Roads. Prior to July 1, 1909, the rental was 40 cents per train mile. Mr. Kimbell says: "Subsequent to July 1, 1909, the track was placed on what is known in railroad parlance as a joint track basis, which provides for the St. Louis, Iron Mountain & Southern Railway paying the St. Louis Southwestern a rental on an arbitrary basis and paying its proportion of expenses of maintenance and operation on car mile basis." (R. p. 998.)

The Iron Mountain can only use it for their through freight trains. (R. p. 998.)

Mr. Gray regards their joint track agreements as a matter of barter, but when these roads bartered then they agreed on a rent and then to put these expenses on an equality, agreed on a car mile basis.

Mr. Byers, Chief Engineer of Maintenance-of-Way of Iron Mountain, says the method of dividing this expense adopted by the State could only be accurate by accident. He says it does not take into consideration that (R. p. 1700) *The Attack On The Car Mile.* 75 per cent of this expense does not accrue by reason of the traffic. (Mr. Parker put 90 per cent as due to elements and time.) He says of the 25 per cent resulting from traffic there is a large proportion not incurred at the time the traffic is handled. His example is the steel rail, which may stay in the track from five to thirty years, and the wear is going on all the time, but the expense of replacement may not be incurred for many years. He objects to it on account of not taking into consideration the difference in size of locomotives. The loading of cars and speed of cars would

also affect this item and is not reflected in this basis. He says repairs of fences, part of these expenses, has nothing to do with the traffic. He says local trains generally have lighter engines. (R. pp. 1700-1703.)

He says these expenses ought to be divided as general expenses are divided, but he says he does not know how general expenses ought to be divided. (R. p. 1705.)

He admits that any factor with which he is familiar would have the same objection as the car mile for cost of replacement, etc. (R. p. 1706.)

In illustration of the ineffectiveness of the criticism of the State's plan, we call attention to these facts in Mr. Byers' evidence: He says the car mile does not account for difference in loading of cars and weight of locomotives. The through car is loaded 4.5 tons more than the local (R. p. 2518), and all agree that the local locomotive is lighter than the through; Mr. Byers admits the effect of the heavier locomotive would be more than the lighter car. (R. p. 1711.) Again the through train gets the best of it.

His criticism of the basis on account of its inapplicability to constant expenses applies to the revenue basis, the train mile basis or an actual division, and applies to any period, one month, one year or a series of years; and yet Mr. Nay (R. pp. 1823, 1824) also uses these arguments against it. Of course he has to admit that like criticism is applicable to any other factor. (R. p. 2042.)

Mr. Ward criticises along the same line (R. p. 1873), principally because from 75 per cent to 90 per cent is due to elements, natural wear, etc.

Mr. Gray criticises it because:

"The car mile is so variable a quantity as to be of no service in any comparison or division which I have ever made." (R. p. 1898.)

Mr. Gray repudiates the principle of taking a factor representing use; he is for the gross earnings "portion everything. (R. pp. 1834, 1835.) However, it is shown these same units are used by the Rock Island in statements to Interstate Commerce Commission, based on exactly the principles, and really much of the detail the same, as adopted by the State here. (R. p. 2033.)

Mr. Gray says that both car mile and train mile are in common use by railroads in dividing maintenance between themselves. (R. p. 1936.)

The testimony of eminent railroad officials was read both to Mr. Gray and Mr. Byers as to the fairness of the car mile basis and that

Eminent Railroad Officials On Car-Mile Basis. it was the generally accepted basis. Neither Mr. Byers nor Mr. Gray would agree with them. These were S. T. Emerson, Chief Engineer of St. Louis, Kansas City & Colorado Railway Company (p. 1715); James C. VanDyne, Superintendent Union Depot at St. Louis (p. 1716); A. A. Talmadge,

General Manager for Receivers of Wabash (p. 1317); James T. Howe, General Agent for the Receivers of Wabash (p. 1718).

This testimony was given in a case in the Federal Court at St. Louis over joint use of the Wabash tracks from Forsythe Junction near Forest Park into the Union Station at St. Louis.

It became necessary for the court to fix a fair basis for the maintenance of the tracks between the roads using them. The testimony of these officials was given before the master. The gist of it was:

The wheelage or car-mile basis is the one usually selected as a fair and equitable method of apportioning maintenance-of-way expenses between railroads jointly using a common track.

When contracts are made there is usually an agreed rental for use of the property and then an apportionment of the expense between them on a car-mile basis.

All these witnesses speak of this being the ordinary method among railroads of dividing maintenance-of-way expenses among themselves and regard it as fair and equitable. To these statements, some from men like Mr. Talmadge and Colonel Howe, historic names in railroad operation, Mr. Byers says: "Such division would produce correct results only by accident." (R. p. 1718.)

The master adopted this basis.

The case came to this Court from the Circuit Court of Appeals and the Circuit Court of Appeals was reversed. The opinion of the Court, written by Mr. Justice Brewer, and *This Court Approves Car-Mile Basis.* adopted by the Court after his death, goes back to, and adopts, the original opinion at circuit, wherein this occurs: "So far as respects the mere matter of keeping up the track, I see no reason to doubt the justice of the rule fixed by the master." St. L., K. C. & Col. R. R. Co. v. Wabash Ry. Co., 217 U. S. 247, on p. 255.

The state of the evidence is this. Approving this basis, Parker, Willmering, Wharton, FitzGerald, Ludlam, Hillman; contra, Byers, Gray, Ward and Nay; but as Nay uses the engine mile in a formula for dividing expenses created by him (R. p. 2034), his action for it speaks louder than his words against it. Parker and Byers have each better qualifications from an operating and technical standpoint than any of the other witnesses on this subject, and they differ widely; none of the other witnesses have special training like them, but all are intelligent and qualified to express opinions on it. It is admitted by Gray and Nay that the car mile is in common use among railroads for this purpose. The testimony from eminent officials in the Wabash case with whom Mr. Byers differs so widely, and the approval of this basis by Justice Brewer and this Court, certainly ought to put this out of the realm of controversy.

To our minds, however, the strongest argument for it is found in the action of these two plaintiffs. One leases the other one of its main line tracks for the use of through freight trains; a contract is

made and expires and a new contract made; the rent is agreed upon as compensation for the use of the track and then the car mile adopted as the basis to apportion among themselves maintenance-of-way expenses. The train mile was discarded, the car mile adopted. It was exactly an analogous use, through freight trains on one road and locals and through on the other, and adding to the difficulty passenger trains on the other road, too, and yet this is the selected factor to fairly divide these expenses. If it is the best method for them in their own affairs, isn't it the best method for them in dealing with the public?

(2) The allowance of $2\frac{1}{2}$ times for locomotive wear over freight car wear is the next controverted item. Mr. Ludlam thus

Engines $2\frac{1}{2}$ Times Freight Cars. explains why it was used: "That is a basis frequently used by railroads, based somewhat

because the average locomotive has twenty roughly figured about two and one-half car miles to an engine mile, wheels and a freight car eight. It is usually on a wheelage basis. (R. p. 1323.) On this subject Mr. Parker gives this reason for using two and one-half times for the engine against the freight car:

"A. I presume that is calculated on a wheelage basis; a 12-wheel engine and 8-wheel tender would be 20 wheels compared to an 8-wheel car.

Q. Is that about the proportion used in this Southwest country?

A. You might say that is the maximum, except in the new type of locomotives, Mallet compound, which are practically two locomotives connected with one boiler and one firebox; that is called articulated; the locomotive is hinged in the middle.

Q. Where are they used?

A. In mountain division; I believe the Santa Fe has some in use and some of the Western lines; I think the first one was exhibited here at the World's Fair.

Q. You are not referring to that exceptional class?

A. No, sir; there are none in the Southwestern country that I know of." (R. pp. 1163-4.)

This allowance was attacked as insufficient by Mr. Gray (p. 1898), Mr. Ward (p. 1857), Mr. Nay (p. 1826) and Mr. Byers (p. 1700). In addition to Mr. Parker, it was sustained by Mord Roberts, formerly Master Mechanic of this, and of other roads (pp. 2111, 2112); K. P. Alexander, formerly Master Mechanic in charge of power and equipment on several roads (p. 2161), and J. A. Simonds, who had served as Roadmaster for many years on different divisions of the Iron Mountain in Arkansas, also as Division Engineer (pp. 2168, 2169). Mr. Byers attacks the whole idea, Messrs. Gray, Ward and Nay say two and one-half times is insufficient; Mr. Alexander says two times is a maximum; Messrs. Roberts and Simonds say a heavily-loaded freight car will do more damage to the way than a locomo-

tive and give very practical and technical reasons for it. On this issue every one of the State's witnesses are entirely disinterested, except Mr. Ludlam, and all the plaintiffs' were interested. Byers' and Parker's experience and training offset each other. Ludlam's and Nay's opinions may well offset each other. Roberts, Alexander and Simonds have better training and experience to pass judgment on this subject than Gray and Ward. In this, as in all other controverted issues, a preponderance in numbers is with the State, and in this instance much better experience to speak on the subject authoritatively.

(3) Allowance of 50 per cent extra engine mileage for switching done by the local trains at stations is the next controverted matter.

Local Switching. The information for this allowance was given by Mr. Maurice Wright, who was assisting Haskins & Sells in some of the work for the State in this case. Mr.

Wright had been for seven years a traveling auditor on the Iron Mountain and his duties required him to use all trains, local and through freight as well as passenger, and he was thoroughly familiar with the entire road in the State. From his knowledge of it, and guided by records of the stations and length of side and passing tracks, and his knowledge of the average cars dropped and picked up at these stations, he made an estimate on the amount of switching required in average conditions all over the State. He describes in detail the situation at each station. Then he makes a corroborating calculation based on time allowed by schedules for the two trains, and the extra time of the local was credited to switching. (The witnesses agree that generally the local runs faster between stations than the through.)

Taking the heaviest divisions on the road, Mr. Wright calculates the switching on each and it runs from 32 per cent to 50 per cent of the mileage of the engine. (R. pp. 1383-1388.) The State in its exhibit used—as in all cases—the maximum against itself and put it 50 per cent.

Mr. Nay said it was an arbitrary percentage; he did not know whether it was enough or too much, and he knows of no way by which it could be determined. He regards it as unreliable. (R. p. 1825.)

Mr. Ward questioned the feasibility of determining it. "No operating man that I know of could determine with accuracy whether that addition is correct or incorrect. It may be right or it may be wrong. I do not know." (R. p. 1857.)

Mr. Gray takes the same position; it is arbitrary, he thinks. (R. p. 1899.)

At last something is found upon which the operating men have no opinions.

Mr. F. P. Johnson attacked Mr. Wright's methods and found some supposed errors in them. Then he makes some calculations based

on running time, showing the percentage of switching allowance should be over 50 per cent. (R. pp. 1987-1989.) In cross examination, however, he made calculations on his own bases and the percentages shown were only 30 per cent. (R. p. 2225.) Mr. Wright recalled, showed he was right and not Mr. Johnson on some of the moves criticized. (R. p. 2263.)

In rebuttal, the State went into this matter thoroughly and put on these witnesses on this subject: Walter Nash, formerly brakeman and freight conductor (p. 2083); D. L. McNew, formerly brakeman, yardmaster and freight conductor (p. 2099); J. A. Simmons, who served as roadmaster on Iron Mountain for many years (p. 2168); Hubert F. Jernigan, former freight brakeman (p. 2189); D. Harston, who had served as brakeman and conductor on both local and through freights on the Iron Mountain (p. 2196); and A. Paulette, a former switchman and conductor (p. 2205). These witnesses were all in various business pursuits, all had honorably and voluntarily left railroad service. The General Manager and Vice Presidents who could form no ideas about the extent of switching performed by the local trains and did not believe any accurate estimate of it possible, should have talked with these men who had done the switching of local trains and whose work required them to daily observe it and know all about the subject. They make accurate estimates of average switching based on conditions thoroughly familiar to them. This testimony can not be read without being convinced that the switching mileage is susceptible of accurate approximation and that 50 per cent is in excess of the facts. In all these undefined matters the State resolved the doubts against itself; in this instance undoubtedly by 15 per cent. On this issue the State certainly overwhelmed the plaintiffs.

On the whole maintenance-of-way account it is submitted that the State has adopted a fair basis of division and it has allowed the utmost for the extra expense of the local over the through, which can be attributed to it, under this head. This is a basis which takes the factor applicable to the expense for dividing it, and necessarily and naturally produces fair results. Contrast it with the revenue basis which Mr. Doddrige says is "an arbitrary percentage based upon opinion and judgment," and which he admits is not accurate and not scientific. (R. p. 481.)

It may well be added that the "opinion and judgment" upon which it is based is not qualified opinion and judgment. The men giving it admit they are not rate men and not familiar with rates and unable to discuss rates, and, as the rates produce the revenue, how do they know whether it is a proper factor or not? We venture to say that no one of the three witnesses produced by the plaintiffs to sustain the revenue theory—Messrs. McPherson, Nay and Doddrige—would do so if he was familiar with the interstate rates prevailing in Arkansas as developed in this testimony, which was introduced

after they had given their evidence. We have too much confidence in the honesty and intelligence of these three gentlemen to believe that with a knowledge of the rate situation, as herein developed, that they would now say the revenue basis was the best method known to them. They each proceeded on the theory that, "consciously or unconsciously," rates reflected the cost of the service and assumed there was a cost relation between State and interstate rates. The testimony herein developed, demonstrates, beyond doubt, that the rates in the Arkansas interstate rate system do not reflect the cost of service—they could not with such patchwork system. The cost relation of State and interstate rates is even more theoretical than the "bridge theory" of transstate freight. No system of general averages can save it; there must be a common level to work that out upon, and that is impossible with the prevailing system. The more the intrastate rates are shown to be out of line and improperly constructed, the more the nonrelation between them and the interstate. There is no co-ordination. It is inordination.

This maintenance-of-way account is the stumbling block for a separation of expenses along practical lines instead of theoretical ones, on account of the large percentage of its expense being due to time, natural decay and the elements, instead of the use of it by the traffic; but it is submitted that the difficulty is more imaginary than real, and this basis, when properly equalized, to bring any two classes of traffic on a common level of expense, must reflect actual conditions and afford a sound and safe basis with which to divide the expense. The weight of opinion and the weight of action sustain it, and it has met the approval of this Court as a fair and equitable basis on an analogous issue.

MAINTENANCE-OF-EQUIPMENT.

There should be no controversy over the car mile being an absolutely fair factor with which to divide freight car repairs between local and through trains on one side and coaches and mail and express cars on the other, because *The Car-Mile Basis the Factor.* the railroads and the State alike use it. If unfair, as Messrs. Gray and Ward say, then, as they admit, it is unfair for the railroads to use it, and their accounts predicated on it, necessarily fail of proof.

In statement 5, exhibit 3, page 2310, wherein the bases for dividing expense are given, and by which the expenses apportioned to Arkansas are obtained, this is found:

Maintenance of Equipment: This account includes all cost of repairs, renewals and depreciation of cars and locomotives, also shop machinery and tools. The cost of repairs, renewals and depreciation of equipment being of a general nature, and not applicable to any particular State, is divided between all States upon the basis of the

mileage of each class of service in each State. The cost of repairs to shop machinery and tools, stationery and printing and supervision is divided between States upon the basis of the total engine mileage over the territory under the jurisdiction of each shop superintendent. The cost of repairs to freight and passenger cars are compiled separately and all expense of a common nature is divided between freight and passenger upon the basis of the number of train miles in each class of service." (R. p. 2310.)

The method used by the State was approved by the many witnesses called upon the subject, and we will omit reference to this testimony. The attack upon it was unusually weak. It was principally made by Mr. W. H. V. Rosing, Mechanical Engineer of the Missouri Pacific and Iron Mountain System. Mr. Rosing, as becomes a mechanical engineer, is extremely exact. He takes up many questions of car repairs and says that the car mileage will not reflect their cost, and that they can be accurately ascertained and that this basis does not do it and works unfairly for the many technical and minute reasons he gives. (R. pp. 1726-1736.)

It may be noted in passing that Mr. Rosing is a strong advocate of the ton-mile basis for dividing expenses, especially maintenance-of-equipment. (R. pp. 1746-7.) May Mr. McPherson pardon him!

Finally, Mr. Rosing's attention is called to the fact that these expenses are all pooled in the Missouri Pacific System and the proportion allotted to Arkansas obtained on a car-mile basis; and he at first says that the car mileage is fair between States but not between local and through freight trains and passenger coaches and mail and express (R. pp. 1751, 1764-5), but, on the plan being further explained to him, he recedes from this position, and concludes his testimony as follows:

"Q. In other words, is not this a fact: if you use the actual figures in one case you should use them in the other?

A. I should say so.

Q. If you use the unit which is a relatively correct unit, in one case, you would have to use it in the other, wouldn't you?

A. Yes, sir." (R. p. 1769.)

Every one must admit that the actual apportionment is better, and every one must admit that if actual figures are not obtainable for both purposes, and a relatively correct unit used to obtain the total expense for freight car repairs (and on the other side passenger coaches, baggage cars, mail and express cars) apportioned to Arkansas that the same relatively correct unit must be used in apportioning that total sum between the classes of cars for which, as a whole, it is obtained.

Mr. Nay also criticises it, but principally because there is a change of units from train mile to car mile from the division between pas-

senger and freight to the division between local and through, and between coaches and mail and express cars. (R. p. 1824.)

Mr. Wharton has heretofore explained that he did not study or consider the train mile division between passenger and freight. He merely used the railroad division to get a starting place to work out his plan of dividing between interstate and intrastate.

Mr. Ward says it is a wrong division, either between service or States. (R. pp. 1888-9.)

He says that its use to divide expenses between the nine States of the Missouri Pacific System as a basis for obtaining expenses to test rates in a rate suit is unsound (R. p. 1875), but finally, while adhering to its unsoundness, says there is "closer similarity" between States than local and through trains. (R. p. 1893.)

He overlooks the fact that between the local and through trains, as hereinafter explained; the dissimilarity is overcome by charging all extra cost of the local over the through to the local train.

Mr. Gray is more emphatic than Mr. Ward in denouncing the car mile decision, but works out a fairness for it between States and an unfairness between trains. (R. pp. 1941-4.) He says in the latter division a distinction enters between long and short haul. (R. p. 1950.) Mr. Ludlam points out the absurdity of such a criticism of the car mile. (R. p. 2273.)

Like Mr. Ward, he overlooked the fact that the difference between the trains is nicely equalized in the allowances mentioned heretofore and which are explained more fully hereafter.

The first testimony to which we wish to call attention is that given by Mr. Stewart R. Knott, at one time Vice President of Louisville & Nashville Railway Company, and later President *Supporting Car-Mile Basis For M. of E.* of the Kansas City Southern Railway Company; and Mr. S. C. Johnson, General Auditor of the St. Louis Southwestern Railway Company (one of these plaintiffs), and the quoted testimony of Mr. Peabody, "a statistical expert" of the Santa Fe System, before the Postal Commission.

Their testimony was read to Messrs. Rosing and Gray (R. pp. 1747, 1748), 1962, 1963), and they disagreed with it.

The gist of the testimony given by these gentlemen before that high tribunal, investigating the postal service of the United States, and the fairness of mail contracts to be let by it, was this:

Messrs. Knott and Johnson testified that the car mile division of expenses between passenger coaches and baggage cars on one side and mail and express cars on the other was fair and equitable. They say that if this basis is subject to any criticism it is because the mail cars are more expensive to maintain than the passenger and express cars. Mr. Peabody's testimony in another connection was quoted before the Commission; he was advocating between express cars on

one hand and mail cars and coaches and baggage cars on the other, the car mile division of the expenses of the equipment.

Surely the State was justified in adopting the judgment of these eminent railroad officers given before a commission of the United States, wherein they say the car mile is a fair and equitable basis for this purpose, and it was adopted by the State exactly as they said it should be used.

The value of the testimony of an expert, aside from his honesty and fairness, is his experience and technical training on the subject under consideration. Tested by this, by far the

The State's Experts on M. of E. weightiest testimony on mechanical and the technical sides of the question now under consideration, is that of Mord Roberts. He says: "A. I am a machinist

by trade; learned my trade in the city of Philadelphia, in the Baltimore Locomotive Works; transferred to the Pennsylvania Railroad Company, 1873, as machinist, and after a year and a half's service as machinist went on the road, firing a locomotive ten months; promoted to the position of locomotive engineer; ran a locomotive there until July 12, 1876. Dismissed for collision Centennial Yards in West Philadelphia; reached St. Louis July 16, 1876, and took service with the St. Louis, Iron Mountain & Southern Railway as machinist, July 17, 1876. Continuously in the employ of the St. Louis, Iron Mountain & Southern Railway from that date until May, 1899, as machinist, locomotive fireman, locomotive engineer, traveling engineer, general foreman of shops, De Soto, Missouri; Master Mechanic at Little Rock; for last six months' service, General Master Mechanic, Iron Mountain Railroad, with offices at De Soto, Missouri; two years as General Master Mechanic, Louisville & Nashville Railroad, headquarters Louisville, Kentucky; three years Superintendent of Machinery, Kansas City Southern Railway, part of the time with headquarters at Kansas City and the remainder of the time headquarters, Pittsburg, Kansas; leaving the railroad service entirely, August, 1904." (R. p. 2106.)

We have not quoted at length Mr. Rosing's reasons against the injustice to the coaches of putting them on equal basis with mail and express car because his conclusion finally agreed with the State's basis above outlined; but, while on the subject, we think this excerpt from Mr. Roberts will put at rest any question of the fairness of it. We desire to rely upon the fairness of the basis more than its conclusive effect by reason of its adoption by the plaintiffs:

"A. The cost of maintaining a vehicle in a passenger train varies considerably owing to the size or dimensions of the vehicle; that is, if it was a passenger coach or baggage car or express car; the express cars, baggage cars and mail cars are usually closest to the engine; the greatest amount of damage and expense to maintaining the draft gear, underframing and trucks, is usually applicable to the cars that are handled closest the engine, for reasons that is obvious, I guess

to you; in the first place, those cars have to take all the shock and stress, due to starting of trains, and the damage to roofs and exterior finish, as a result of cinders and gases from the locomotives; but other than those damages, the coach has a damage that does not enter into the baggage car or express car, and that is the damage to interior finish, lamps, and sash locks, and upholstering damaged sometimes by passengers, and, as I said before, they pro rate this cost between the cars; it doesn't take as much labor or varnish to cover a 50-foot car as it does a 70-foot car, and where the dimensions were practically the same, I would not make much difference between the kind of vehicles in the train, for I believe the damage to the cars nearest to the engine, as a result of the items I have just mentioned, is compensated for by the interior damage done to the passenger coach by the traveling public.

Q. Taking it by large and by small, you think one would about equalize the other?

A. I believe they about equalize each other." (R. p. 2115.)

Mr. K. P. Alexander gives his technical experience:

"A. I was a machinist about ten years, part of the time with the Missouri Pacific—machinist at St. Louis, Missouri. Later I was with the Frisco as machinist and Division Foreman at Newberg, Missouri, and at Fort Smith, Arkansas, about fifteen years.

I was then Master Mechanic for the Fort Smith & Western Railroad Company, in charge of all power and equipment, at Fort Smith, Arkansas—office at Fort Smith, Arkansas, for the period of two years." (R. p. 2158.)

On this particular subject Mr. Alexander testified as follows:

"Q. Now, not taking the figures derived from the pool, but upon car mileage basis, per mile run, separating the express and mail from the coach and baggage, what is your opinion on that, that is what I am asking?

A. Covering the matter, what we generally call car repairs, I should think the greatest expense would be on the car nearest the locomotive, on account of it having to absorb the shock of all the loads or cars behind it, which would mean that there would be less damage to the coaches than there would be on the baggage cars or mail cars. Very little cleaning at terminals is done to the mail car, express car and baggage car—

Q. Cleaning, Mr. Alexander, goes in another account, that is not the car repairs, that goes into the transportation account, that doesn't go into the car repair account, so you can exclude that from your consideration.

A. Then you want just the car repairs, everything pertaining to repairs?

Q. Yes, sir.

A. I have no figures; never kept any figures on that point, and from my experience, I doubt if it is usually done, and I would hardly know how to estimate it.

Q. Which goes into the shop more often, the car next the engine or the coach?

A. The car nearest the engine, it would go into the shop oftener, for the reason it would receive all the shock of the entire train, and the gases of the coal burning in the engine, and the cinders, would damage the roof more quickly than it would do further back in the train, but I presume there would be some compensating elements on the other side, about painting, varnishing, putting in glass, and so on, in the coach.

Q. Taking it by large and by small—the general average condition, what would you say as to the division of the car repairs, the mail and express on one side and the coach and baggage on the other—the damage to the baggage and coach as against the mail and express, what would you say as to the repairs?

A. Well, the coaches are very much longer than the baggage or express cars, and the mail cars are usually also longer, which would require more painting and more varnish than for the shorter cars—the question is a little bit ambiguous.

Q. I will make myself clearer; the question is to separate and get the mail and express expense out of the passenger expense, and they have used the car mile basis and apportioned that expense, taking the mail and express on the one side and the baggage and coach and everything in passenger traffic from the other side—I understand your testimony is, the greatest injury to the cars would be to those toward the front—that is to starting and stopping and to paint and varnish?

A. Yes, sir.

Q. On the other hand, there would probably be more injury to the interior of the coach, the glass, upholstering, of the coach and things of that kind?

A. I think so.

Q. The question is this: treating them alike, has any injustice been done to either traffic—treating them *alike* on the car mile run?

A. I haven't ever kept any data on that; it is a very difficult question to answer; but then from my observation I should imagine that it would be about fair.

Q. The coach would likely get more repairs, but wouldn't get into the shop as often? That would probably be about the situation?

A. Yes, sir." (R. pp. 2164, 2165.)

Summarizing the evidence on this on the basis used for these maintenance-of-equipment expenses, the car mile:

It is supported generally by opinion evidence of many of the State's witnesses, supported by Messrs. Knott, Peabody and S. C. Johnson, in an investigation which would call for the utmost candor. Supported by Mr. Rosing, who says when actual data is not used for the initial sum to be apportioned, but a relatively correct unit, that the same unit should be used for these purposes; supported by Messrs.

Roberts and Alexander, disinterested and thoroughly qualified experts. It is opposed by Messrs. Nay, Gray and Ward; none of them with technical knowledge of the subject possessed by Rosing, Roberts or Alexander.

The preponderance, again, is with the State:

STARTING AND STOPPING EXPENSES.

A source of much conflicting testimony was the proper allowance to be made against the local trains for additional stops of it over the through and the consequent injury to equipment from this cause.

Mr. Maurice Wright, who served for seven years as a traveling auditor on the Iron Mountain, and whose intimate knowledge of every mile of its road and every train run on it was of great service to the State in getting at actual conditions, testified:

"Taking the Iron Mountain System in Arkansas, I think that five miles average stops for local trains is very nearly accurate, and that twenty miles for through trains is a very fair average; that is my opinion, based on having frequently ridden on through freight trains and very frequently on local freight trains." (R. p. 1388.)

This was the basis used by the State, counting the local as stopping every five miles, the through every twenty, and charging four times as much to the local on this account. While Messrs. Gray and Ward said this ought to be eight times and the plaintiffs, in their correction of the State's plan (their exhibit 56), use eight times, we believe in was a confusion of issues and not of facts. The plaintiffs' witnesses laid much stress on the extra stops of the local over the through and the consequent greater injury to equipment. Especial attention is called to Mr. Doddridge on this point. (R. p. 489.) It is a recognized fact, and one of the elements for which proper compensation must be found.

That the stopping was correctly estimated was admitted by plaintiffs' counsel in a question to Mr. Gray. To it and Mr. Gray's answer your attention is especially directed:

"The State's accountant has made an assumption that each local train makes a stop each five miles, and each through train makes a stop for each 20 miles. That assumption is based upon the evidence of operating men of the Iron Mountain railway and we have no complaint to make of it.

Now, for the purpose of ascertaining the relative expense, the accountants have in determining the starting and stopping expenses, multiplied the local car miles by four, in order to account for the more frequent stops of the local train. Then they have in addition to that assumed that each car in local service requires two terminal handlings, to each terminal handling of a car in through service.

Now, I wish you would look at that and state if you think a sufficient allowance has been made there for stopping and starting of cars in local service?

A. There is as wide a variance as it is possible to conceive between two similar things, between a stop of a local train and a stop of a through train; in every-day practice.

The stop of a through train is most frequently for transportation or operating reasons; that is, it is a stop to take a siding for or to meet and holding the main line for the opposing train. It is usually unaccompanied by any more work than the taking of the sidetrack or holding the main line while the other train takes the sidetrack.

The local freight trains perform the greatest amount of its functions in connection with a stop of that kind. It may be hours' duration, or it may be short. It is all dependent upon the work required at that local station, as differentiated from the through train which has no work whatever to do.

I would say that an allowance of four times, which is predicated solely upon the fact that the stops are four times as frequent, is wholly unfair. I am not prepared to say what it should be, but it should be several times that." (R. p. 1902.)

That Mr. Gray, and likewise Mr. Ward (R. p. 1867), confuses these issues, is apparent from the following quotation from Mr. Roberts and Mr. Ludlam:

Mr. Roberts says, after the above quoted testimony of Mr. Gray was read to him:

"A. It occurs to me, if I might suggest there, that Mr. Gray has got two items mixed; it is the switching that he has reference to, that adds to the expense that the local would have.

Q. I am inclined to think you are right, but I don't know; I am just giving you in his own language, his entire statement on the subject.

A. The damage in stopping the train with the air brake, is to each individual vehicle in the train, which includes the wear on the wheels, brake shoes, and the brasses, and the local trains, as a rule, are light tonnage trains, and not near as many vehicles in the local trains as there is in the through train, and the damage to stopping a local train could not possibly be any greater than it would to a through train, and with the damage based upon each individual vehicle, if the local train had more cars than through trains, the damage would be greater, and if it had less cars, the damage would be less.

Q. For your information, I will state, that the statistics show that the average local train is 16 cars, and the average through train is 32, and on one road, 33. We are referring, of course, not to the expense per train, but the expense per car.

A. The expense per car should not be any greater.

Q. From this cause to any one train over the other?

A. The cost of stopping and starting, the greater expense would be to the train that had the greater number of vehicles in it—the greater tonnage, simply because the strains and stress would be that

much more severe on the cars nearest the engine; that is my way of looking at it, and that has been my experience; I don't think, in the damage to starting and stopping, we can consider the damage or cost of station switching." (R. pp. 2110, 2111.)

This occurs in Mr. Ludlam's testimony in surrebuttal:

"Q. Mr. Ludlam, in an exhibit filed by the railroads, number 56, (this is the exhibit which we term the correction of the State's plan. It is ostensibly an effort to correct the State's plan, using in some particulars, the State's bases, and in others their own), in 'Maintenance-of-Equipment' subdivision (b), under the head of 'stopping and starting,' the railroads have put this in:

'Car miles, same, with local car miles multiplied by eight.'

In an exhibit filed by the State the same factor was used, except the multiple was four, representing (as explained in the testimony), four stops of the local as against one of the through: Now, I assume that this 'eight times' is based upon the testimony of Mr. Gray and Mr. Ward, which I want to read to you." * * *

Then the testimony of Mr. Ward, and the above-quoted testimony of Mr. Gray was read to him, after which he was asked if they were correct in using the multiple eight instead of four, and said:

"A. No, sir. The multiple of four is used to apply to the question of starting and stopping only. The question of the increased cost of the terminal handling on the local train is covered by a separate allowance.

Q. Where is that? Point that out. I think these gentlemen just failed to understand that and I want you to point it out.

A. That is on the same exhibit, under subdivision (b) 'Maintenance-of-Equipment.'

We make an allowance just below the allowance referred to for stopping and starting. We make an allowance for terminal handling by multiplying the mileage of the cars in the local trains by two and using the mileage of the cars in the through trains as they were.

Q. What does that represent, Mr. Ludlam?

A. That represents that on the average the cars in the local train will receive two terminal handlings to one terminal handling on a through train. That is in the case of the Iron Mountain, I am referring to.

In the case of the Cotton Belt we allow four terminal handlings on a local train to one terminal handling on the through train.

That is based on the premise that the local train will start out with a load of cars and that it will distribute all of those cars during the course of its run, and that during the same run it will pick up an equal number of cars, which it will carry into the last terminal.

That assumes that every car on the local train will be set out during the course of the run of the local train and another car picked up in its place. As a matter of fact there are some of the cars that

start out of the terminal, on a local train, that go through to the end of the run of the local train without being set out.

Q. That operates as a maximum as against the local train on this terminal handling between division points?

A. Yes, sir.

Q. And it is the very item that Mr. Ward and Mr. Gray discuss, is it not?

A. Yes, sir.

Q. I presume those gentlemen had not studied the exhibit carefully enough to see that that is taken care of.

A. I should assume from their evidence that they did not understand the exhibit.

Q. To take the eight times, as done there, would practically amount to doubling all these cars set out, and every car set out and in, would it not, following your plan?

A. It would be an attempt to provide for the terminal handling under the specific allowance made for stopping and starting, although, as I have already stated, the terminal handling is taken care of in another place.

Q. It occurred to me at one time that probably they were confusing that stopping and starting also with the terminal handling in the division; is not that taken care of?

A. Yes, sir.

Q. And this is merely the terminal handling between the divisions?

A. Yes, what you might call 'on the road.'

In that connection I would like to say before we get away from that, that we consider an allowance of four stops of the local train to one stop of the through train, as being the maximum that could possibly accrue to the local train for the stopping and starting expense.

Q. I think Mr. Ludlam, subsequent developments have proved that it was the maximum.

A. The same remark would apply to the allowance which we made of two terminal handlings for the cars on the local trains. We thought that would be the maximum that could possibly be reached." (R. pp. 2267-2269.)

We have gone into this, probably, more fully, than the importance of the subject justifies, to prove that the State's plan was right, and the criticism of it on this score which was carried forward into exhibit 56, was a palpable blunder on part of the plaintiffs.

Although the correctness of Mr. Wright's basis of a stop every five miles for the local to a stop every 20 miles of the through was expressly conceded, the State took further testimony on it, and showed it was a maximum.

A. Paulette served as brakeman for years on the Iron Mountain in Arkansas, then for five or six years as freight conductor on both

local and through freight trains. He served a long time on the Central Division, from Little Rock to Van Buren, one of the heavy divisions of the road, and takes up this question of the stops of local and through trains in detail.

He shows, through much detail, that on account of stops for water, at junction points and for orders and for passing trains, that the average through train can not make more than 10 miles without a stop; he reduces the stops of the local train to something under one for every five miles, about four. (R. pp. 2204-2213.)

This is the substance of all the testimony on this subject which we can find in the record.

Judge Trieber, in his opinion, says:

"The Court finds from the evidence that while the local train stops every five miles, the through trains stops every 35, and for this reason, the local trains are chargeable with seven times as much for that item as through trains." (R. p. 2624.)

So far as we can find, we have given the substance of all the testimony on this issue, and can find nothing to justify the 35 miles for the through.

Exhibit 46 (R. p. 2412), gives the stops of the through passenger trains as every 36 miles. The testimony of Mr. McPherson (R. p. 319), is that the through passenger trains stop on an average at intervals of 35 miles, while the local trains stop every five miles; and he calculates that the passenger mile division of expenses fails to consider these differences between the two trains, while the expense incident to the frequent stoppage is relatively seven times greater.

Probably in the mass of testimony, the learned Judge overlooked that this was referring to passenger trains, while the subject under consideration was local and through freight trains.

While somewhat a digression to save returning to this subject, Mr. McPherson said the through trains on the Central Division stop every 17 miles. (R. p. 319.)

Later, so as to avoid confusion as to what were local and what were through trains, both passenger and freight, Mr. McPherson was called up to file an exhibit classifying all trains running during the last six months of 1907. (R. pp. 377, 378.)

The State accepted his classifications as official (he was assistant to the General Manager), and it has removed any controversy on this subject. His exhibit 46, made in response to this, shows only eight of these through passenger trains, and those he referred to as through passenger trains on the Central Division, stopping every 17 miles, were local trains.

The starting and stopping on the passenger side is cared for by dividing that expense with mail and express, and the passenger portion divided between intrastate and interstate on the passenger mile basis. The greater intrastate passenger mileage absorbs the greater

part of it, being 58.71 per cent intrastate, and 41.27 per cent interstate. (R. p. 2539.)

The fact that the bulk of the 30,000,000 interstate passenger miles are necessarily made on the 48 local trains, removes, entirely, Mr. McPherson's theoretical objection to this basis for train costs. He was theorizing that the local train was the vehicle of intrastate passenger traffic, while the facts are, practically 85 per cent of the trains are local, carrying the bulk of both classes of the traffic.

Returning to the freight side of the problem, we submit that it is established that a stop four times on the local to one on the through is a maximum allowance against the local, and consequently, resulting, as all maximum allowances against the local ultimately do, in burdening the intrastate with more than its fair share of the expense.

The load of the local freight train is 71.49 per cent interstate, and 28.51 per cent intrastate; the through 5.59 per cent intrastate, and 94.41 per cent interstate. (R. p. 1005, and exhibit "I," p. 2516.)

Yet, the total interstate carried on the local is only 8.70 per cent of all the interstate, while the total intrastate carried on the local is 39.10 per cent of all the intrastate. (R. p. 2615.) Therefore, all these heavy expenses of the local ultimately fall on the intrastate in the proportion that 8.70 per cent bears to 39.10 per cent; and while 60.90 per cent of all the intrastate is borne on the through trains, yet, that only represents 5.59 per cent of the cost of the through.

As seen in exhibit "K," page 2531, there are the percentages ultimately applied for the division of expenses between these trains, found on the data shown in exhibit "I."

Having obtained the relative number of stops for the two trains, then the next problem was to find the amount of injury to the equipment attributed to this cause. The plaintiffs' witnesses, in enumerating the various causes of extra expense of the local over the through, laid great stress on this element, and it was a recognized element and must be properly cared for in any system of distribution of train costs between these two classes of trains.

In the State's plan, the proportion of injury for these causes was allocated pursuant to a table prepared by A. M. Wellington, as the result of experiments on the Pennsylvania railroad. It is a text book called "The Economic Theory of Railway Location." (R. pp. 2523 and 1741.) According to this table, 21.5 per cent of the injuries to freight cars is due to stopping and starting, and 13.5 per cent to terminal handling.

The authority of Wellington's work, and its corroboration by recent technical data, was brought into evidence through Mr. Parker, engineer of the Texas Railroad Commission. The testimony is as follows:

"A. Yes, sir; we used it as a text book in my studies in engineering department at college.

Q. How is it regarded among engineers, and men studying the questions that are treated in his work?

A. It is taken as authority.

Q. Some question has been raised as to the date of Wellington and the date of this table from which this was taken; I believe it has been put back as far as 1887, the date when it was made; have you given any consideration to the effect of time upon these items?

A. Yes, sir; some.

Q. Have you any authority that would show any reasons or show any changes in the conditions?

A. I have before me the report of American Railway Engineers & Maintenance-of-Way Association, volume 5, of 1904, and on page 695 is a statement similar to Mr. Wellington's with some slight changes, which was compiled by Mr. G. B. Berry, now chief engineer of the Rock Island System.

Q. Read into the record so much of the statement as is pertinent here?

A. He contributes in table 2, on the page heretofore given, the statement showing the distribution of cost of locomotive repairs on the Union Pacific Railroad, and he applies to freight and work engines 7.35 per cent of the damage due to getting up steam and terminal work, and to switch engines 12.474 per cent.

Q. 12.47 where 13.05 is allowed in Wellington?

A. These figures I have just given apply to locomotive repairs; the figures quoted here from Mr. Wellington are applicable only to freight cars; the figures given by Wellington for damage due to stopping and starting at way stations is approximately 21.5 per cent, and Mr. Berry's table, the repairs to cars due to the same service is 20 per cent, and the repairs due to terminal handling in Mr. Wellington's quotation is 13½ per cent, and Mr. Berry's is 16 per cent.

Q. Makes a total of 36, where Wellington's total makes a total of 35?

A. Yes, sir." (R. p. 1165.)

Mr. Parker expressed the opinion that as applied to local and through freight trains in the Southwest, their percentage more than caused those contributing causes to the injury to freight cars. (R. p. 1166.)

Mr. Rosing makes a strong attack on the Wellington tables, and gives extended and technical reasons therefor, ending with a table of his own, assigning, according to his judgment, *The Attack* 32 or 33 per cent for stopping and starting, and *On Wellington's Table.* 24 or 25 per cent for terminal handling. (R. pp. 1727-1731.) Aside from the technical features, which we will not discuss, his argument is this:

Wellington's book was written in 1887, the tables prepared in 1877, that freight cars only had one truck and brakes operated by hand.

Since, then, the brake rigging has been changed, and none of the old brake rigging is applicable today; and air-brakes are applied to both trucks.

The entire brake arrangement is quite different, and the maintenance very much more than stated by Wellington. Drawbars and sills, which Wellington puts at 15 per cent, he thinks should be 35 per cent.

He takes up the technical details of the Wellington table, and discusses them fully, and says they should be charged to fit modern conditions. (R. pp. 1728-1732.) He also brings in another factor adding to greater maintenance expense in modern railroading; that the use of automatic couplers and air-brakes, relieving the trainmen of exposure to danger, render them more careless in operating the trains, thereby causing more injury from these causes. (R. pp. 1731, 1732.)

He says he has always heard Mr. Berry spoken of as a man standing very high in his profession, but he says he is a civil engineer, while he (Rosing), is a mechanical engineer. (R. p. 1740.)

He disagreed entirely with Mr. Berry and seemed unable to understand Mr. Berry's paper and its exact application to the subject in hand. (R. pp. 1740-1758.)

The leading parts of this article which was read in 1904, before the "Railroad Engineers and Maintenance-of-Way Association" (R. p. 1741), is given at pages 1759-1763.

Mr. Berry was at that time Chief Engineer of the Union Pacific Railroad, and at the present time, Chief Engineer of the Rock Island System.

To show the thoroughness of his work, and the scientific basis upon which it has worked out, these excerpts, ending with the table in question, are given:

"In order to determine the relative merits of different locations, values must be ascertained for each detail affecting operating expenses. 'The Economic Theory of Railway Location' by Mr. A. M. Wellington, treats the entire subject fully. In this work Mr. Wellington has given to engineers a logical method of obtaining the values for distance, curvature, rise and fall and gradients, but the modern classification of operating expenses as adopted by the Interstate Commerce Commission gives these expenses in greater detail than could be obtained during the life of Mr. Wellington. This detail is of material assistance in following out Mr. Wellington's general method, as it lessens the chance for error in judgment as to the proportion of each item of expenses which will be affected by changes in the details of location.

Prof. W. L. Webb, in his recent work on 'Railroad Construction' has developed values for the various details, following the general method given by Mr. Wellington, but using the classification and figures given in the reports of the Interstate Commerce Commis-

sion for the entire railway system of the United States. A study of these reports shows that the average cost per train mile in the more populous States is less than in the States west of the Missouri River.

In order to obtain a value of these details of location for the use of engineers in the Western States, the general methods of both Mr. Wellington and Professor Webb are applied in this paper to the operating expenses of the Union Pacific Railroad Company."

* * * * *

"Before proceeding to consider the value of gradients, distance, etc., it is necessary to obtain some basis for arriving at the proportional percentages of the more important items that are affected by changes in location. In many of the smaller items judgment alone has to be used, and in most of such cases, a wide variation in judgment will produce but a slight change in the final figures. In the larger items of maintenance-of-way, maintenance-of-equipment and conducting transportation, the reports of the various departments for the four years covered by Table No. 1, have been studied, and the conditions as they exist on the Union Pacific have been considered. The reasons for adopting these percentages are given in detail in Wellington's 'Economic Theory of Railway Location.' Tables Nos. 2, 3, and 4, together with the following notes, give some additional reasons, and also explain those points wherein percentages different from Wellington's have been used."

"*Maintenance-of-Equipment.*—From the annual locomotive performance sheets and statistics of train service it is found that total train mileage is but 75 per cent of total locomotive mileage. Table No. 2 is similar to a table given by Wellington, the total cost of locomotive repairs being prorated between the different classes of service according to mileage. The distribution with reference to contributing causes is changed somewhat to fit the conditions on the Union Pacific, curvature on the Union Pacific averaging 17 degrees per mile, whereas Wellington assumed 30 degrees per mile."

* * * * *

TABLE NUMBER THREE.

"Statement Showing Distribution of Cost of Car Repairs on Union Pacific Railroad.

Distribution of contributing causes in per cent.

CLASS OF SERVICE.	Total cost per cent.	Time and exposure.	Stopping and starting.	Switching.	Curvature.	Grades.	Distance.
Passenger	100	11	20	11	2	20	36
Freight and Work.	100	6	20	16	2	20	36

(R. pp. 1759-1763.)

Mr. Nay says:

"The addition of the air brake I am sure would cause quite a change in those expenses. That is to say, in 1877, when a train was stopped it was stopped by the use of hand brakes. The brakeman would climb on top of the cars and set the brakes on one car and then on to the next, and the stop was bound to be gradual, under those conditions. While today, with the use of air brakes, stops are frequently made with great suddenness, such as to cause considerably more damage by stopping than in the days when hand brakes only were used.

Q. You think that per cent would be increased?

A. If it was 21.5 per cent in 1877, I am sure it ought to be much greater now." (R. p. 1829.)

Mr. Ward says he has examined Wellington's Treatise, and he does not know what hypothesis he pursued to reach the conclusions reached, but it was written 30 years ago, and in his "opinion, his figures can not be verified by any test in modern practice, because the repairs due to terminal handling are very much greater at the present day than 13.5 per cent."

As to stopping and starting at way stations, he does not know, but thinks the percentage too low. (R. p. 1860.)

He gives his reasons fully.

Mr. Gray criticises it much along the lines of Mr. Ward: He says these matters can not be ascertained, and such a table is a mere guess, and any tests made prior to 1887 would be valueless. In his judgment, the proportions between starting and stopping and terminal 35 per cent to 65 per cent for other causes, should be reversed. (R. p. 1900.)

Mr. Gray admits he was not familiar with Wellington's book. (It was shown that the one from which the table in question was taken was the 1908 edition.)

He says that he knows Mr. Berry intimately, and he would not give much consideration to the matter, but for the respect he has for Mr. Berry.

He says that "if Mr. Berry has stated, and it is in evidence, how he arrived at those figures, and they are no arbitrary assumptions, they would have a good deal of weight." But he says if Berry agrees with Wellington's proportions, he believes both are manifestly wrong. (R. pp. 1957, 1958.)

Mr. Berry has stated the methods of arriving at the contributing causes, based on tests on his road, reinforced by much scientific data, and they are certainly not arbitrary percentages, but scientifically worked-out results.

His article was read before men of his craft, an audience capable of scrutinizing it with scientific accuracy, and no man of Mr. Berry's position and standing would go before his profession with carefully worked-out "arbitrary assumptions." The operating men like

Mr. Gray and Mr. Ward have their opinions, but they must give way to such data as this.

The State might safely rested its case on Parker, Wellington and Berry v. Rosing, Nay, Gray and Ward, but it did not. Mr. Rosing made the point that a mechanical engineer could best pass on this subject, inferentially (but with due modesty), indicating that his qualification to pass judgment upon this subject was better than civil engineers. The State called two mechanical engineers, Roberts and Alexander, whose training and work furnished the same qualifications as Rosing's. In addition, called a roadmaster and experienced trainmen, who had operated trains under the old order and the new order, and showed that if Wellington's percentages were right at the time made, that the change in equipment instead of increasing, decreased these items of injury to freight cars.

So that the Court can grasp the converse of Rosing's proposition we quote that explanation from Mr. Roberts:

"I wish you would express your opinion, based upon your experience, as to the effect of the latter day equipment, to which I have referred, as contrasted with the link and pin equipment and the hand brakes, in so far as it affects injuries to freight cars?

A. Does that refer to the item of stopping and starting?

Q. I have included in my question both of them; probably you had better answer them separately; stopping and starting is one item, which Wellington gives at $2\frac{1}{2}$, and switching, which he gives at $1\frac{3}{4}$; they are grouped together in this exhibit as 35; I expect it would be better to treat them separately.

A. It was my experience, while connected with the railroad, that the application of the vertical plane coupler, with the improved draft gear, and also the completion and application of power brakes, to the train, had eliminated largely the damage accruing from stopping and starting in the train, local or through, and I believe I am familiar with Mr. Wellington's table, and as you stated, we all looked upon that as authority in its day, but that would not apply now to the changed conditions.

Draft gear and car underframing, has been designed and reinforced with a view to eliminating that damage; I remember very distinctly, when at almost any freight yard or at any intermediate terminal along the Iron Mountain railroad, during the days of the link and pin coupler, that at nighttime, you would need a lamp to get through it and keep from falling over drawbars, and draft timbers, pulled out in the ordinary handling of trains.

The item of caboose chains or car chains in caboose—we used to have to re-enforce springs in our cabooses and to carry chains to chain up cars that would be damaged on the road by pulling out of drawbars; that was largely due to the braking of trains, all from the hind end of the train. They used to have a very severe brake in

the caboose, and they would set that up, with the immense amount of slack that there was in the link and pin coupler, and if the train was of any length, it would very often pull out a drawbar, and the contributory damages, as a result of that—of the drawbar dropping down on the ties—perhaps would not come out of the socket entirely—I have known of many very severe and expensive freight wrecks, as a result of that, which is almost, or was when I left the service, an unheard-of thing, and we have knowledge of those things and I believe it is fair to presume that Mr. Wellington's figures today would be 50 per cent too high for the item of expense due to stopping and starting of trains.

Q. Assuming that his table was correct, as near as such tables could be in the day it was written, of $21\frac{1}{2}$ per cent to that cause, you would now ascribe what per cent?

A. Not to exceed $12\frac{1}{2}$, and I think 10 would be nearer the figure.

Q. What do you say on the other proposition—assuming that $13\frac{1}{2}$ per cent would be correct for switching, under the old order of things, what would be the difference now?

A. It is very evident that cars are handled very rough, as a result of switchmen not being compelled to go between the cars to couple them, which applies also to cars broken on the road, but as I stated in the other case, owing to the design of the draft timbers and rigging generally, which was all taken into consideration when the changes were made, the yard damage is not near so great as it used to be; that is due to the fact that the cars are built very much stronger—to take the cars that we used to operate, 15 years ago, and handle them the way they handle them now, why you wouldn't need anybody only the switchmen, to break them up; they wouldn't stand it at all, but the expense to build those cars, to fit them for the purpose of resisting the rough usage, has been very much greater, but with a view, of course, to reducing the cost of maintenance.

Q. That additional expense would be reflected in the capital account, not in the repair account?

A. No, sir; that would not be taken into the repair account, and my judgment is that Mr. Wellington's figures are 25 to 40 per cent too high, as applicable in these days." (R. pp. 2108, 2109.)

Mr. Roberts was cross examined with great thoroughness on that subject, but like all well informed men on his subject, was able to explain his reasons, fully, intelligently, and in detail.

Mr. Alexander thus concisely states the proposition:

"From my observation and practical experience, I would say that the percentage should then be somewhat less, for the reason that all power and equipment was, during that time, and has previously been made much more substantial than it was during the time of the link and pin couplers, and during the time of the hand brake—all parts being strengthened to take care of the additional weights and additional length of trains and the heavier equipment, and I believe

that the percentage would be possible one-half of the percentage of the link and pin percentage." (R. p. 2159.)

Mr. Alexander says there were few changes in equipment from 1904 to 1907 (the former the year both he and Roberts left service, and the latter the period of our inquiry.)

On June 30, 1904, over 90 per cent of the equipment had been supplied with air brakes and automatic couplers. (R. p. 2167.)

Assuming Berry's table to have been prepared on data gathered three or four years prior to 1904, which were transition years from link and pin and hand brakes to automatic couplers, and air brakes, he says the starting and stopping percentage should be materially less since the equipment has been completely modernized. (R. p. 2162.)

Mr. Simmons served as roadmaster and division engineer on the Iron Mountain. He gives many practical reasons based on his observation under link and pin and hand-brakes equipment, and under modern equipment to show why the starting and stopping and terminal injuries should be less under modern equipment than under the old order. (R. pp. 2171, 2172.)

Mr. Paulette served as switchman, fireman, brakeman and freight conductor, his service being from 1885 to 1906. He is familiar with handling trains and equipment under both the old and modern systems, and he explains, practically, why there is less injury to the cars under the present method. (R. p. 2211.)

D. L. McNew was in railroad service from 1882 to 1906, as brakeman, freight conductor, yardmaster. He explains why the Wellington percentages for the stopping and starting should be less now than under the former system. (R. p. 2100.)

By men handling the cars receiving the injuries from these controverted causes; by the master mechanics who repaired the injuries; by the roadmasters and yardmasters gathering up the wreckage from them; by scientific engineers and by practical tests, made by men of the highest professional standing, Mr. Rosing, Mr. Gray, Mr. Ward and Mr. Nay are overwhelmed in their attack on the State's distribution of this expense.

YARD AND TERMINAL EXPENSES.

Yard locomotives serve both local and through trains, and the expense was divided on basis of number of cars of each class of cars handled by the yard engine during the period. (This falls under maintenance-of-equipment.)

Other yard and terminal expense, after separating the station expenses at terminals, are divided according to number of cars handled in the yards and terminals, using the actual figures from the October test.

This method was criticised by Mr. Nay (R. pp. 1828-1832), and probably other witnesses, and explained fully by Mr. Ludlam (R. pp.

2285, 2286), wherein he showed that Mr. Nay had misunderstood the exhibit.

The justice of counting all cars in division yards equally has been demonstrated by the record of the actual movements of all transstate cars made by Mr. Hamilton and of the breaking-up of all through trains in the terminals. That testimony has been set out in full in discussing the "bridge theory" of transstate freight.

See Record, pages 1432-1442, wherein Hamilton traced all the transstate cars for first half of March and October, 1907, and the terminal handlings in October, showing that, with rare exception, every train into every terminal was broken up and the cars in it, went out to the next division in other trains, varying from two to nine others, carrying the cars brought in by one train—a complete breaking up and re-making of trains.

To meet the force of the plaintiffs in rebuttal, though Mr. Moore, filed a consist of train No. 55, during the month of October, 1907 (R. p. 1773), this was made exhibit 53. This was to show that there was little breaking of this train at division yards, and little switching of the cars detached or attached. He says the train was so made up as to cut off at next division the cars going out of it there, the main train staying on the main track, the other cars, engine and caboose would be added and then go on its journey. This was in effect a modified bridge theory. The purport being that while not a "straightaway movement through the State," yet, there was less yard service for these through trains than the locals.

The State, in surrebuttal, put on practical train men to explain the handling of such a train as No. 55, which is a fast red ball train, a high class merchandise train.

They say that the handling that train gets in terminals is no fair test of what through trains would get in terminals.

This train is classed higher than any through train.

McNew thus explains how it is handled:

"Those fast trains, every preparation is made to save delay to them; where there is any pick-ups, they are always fixed, placed first out, or in a place where they can be picked up with the least delay, even in big yards. Very often a man's position depends on whether he does delay that train or not; while the other trains, ordinary dead freight, it don't seem to have any particular thing to do with the handling of those trains—not so much at least—probably it will be composed of lumber or cotton, or something that is picked up by locals or through freights on the road, brought into the terminals, and used to fill out the engine's tonnage with, on either those fast trains or some other through trains.

Q. And they would all be switched in the terminals?

A. Yes, sir; probably stored; some may stay around for several days.

Q. You have had experience as yardmaster and know how those are handled?

A. Yes, sir." (R. p. 2104.)

Harston says that ordinarily, a good deal of switching was done to train No. 55. But that its class was usually gotten in and out of the terminals as fast as possible.

The exceptional character of this train was explained by Nash, (p. 2089), McNew (p. 2103), and Harston (p. 2200).

H. B. Amouck put in evidence exhibit 52 (R. p. 2434), showing terminal handling of loaded cars in 37 trains out of Hoxie in October, 1907.

He testifies that these 37 trains were selected, as he came to them from Mr. Hamilton's worksheets. He thinks they are representative movement, and that he did not pick out the best ones. Exhibit "I" shows about 2,700 through trains run in October. How less than 1½ per cent of them could be representative of 98½ per cent, is not explained.

There is a great deal of detail in his exhibit, the purport of it all to show the through trains in question got through without complete breaking up in terminals.

These all entered into Mr. Hamilton's report, which shows the average of all, and no value can be attached to a few selected ones, where the minimum breaking up occurred.

Mr. Hamilton thus explained this exhibit:

"Q. Mr. Amouck put in some exhibits on that subject, did he not?

A. He covered practically the same ground as Mr. Moore, taking some 30 trains out of Hoxie as a type.

Q. How did he get the 30 trains?

A. He took them from some worksheets we had prepared, on which we counted the cars into and out of the terminals and on which we showed lapsed or delayed time in the terminals. We simply prepared that to use in a division of expenses.

The other sheets were made—those to which in my mind Mr. Amouck's criticism would better be applied—were sheets in which we showed the breaking up of these trains at terminals and varying delays to the cars.

Q. He did not criticise those?

A. No, sir; his testimony was along the same line as Mr. Moore's as I understood it." (R. p. 2259.)

Returning to Mr. Moore's fast Red Ball No. 55, Moore says his exhibit was made up of the consists of that train (R. p. 1773.) He says the wheel report would not show the relative order of the cars, that it is made up to show system cars and foreign cars and empties, for the assistance of a car accountant, but not in train order. He was shown a form of conductor's wheel report giving direction "cars must be reported in train order commencing with the caboose, to

show the make-up of trains leaving district terminals," and said it was disregarded. (R. pp. 1781, 1782.)

He assumed the consist which he put in evidence gave the order of cars.

Cannon, the Division Superintendent, says the wheel reports show train order of cars, as a usual rule, the exception being the local. (R. p. 1800.)

Harston testified that wheel reports gave the train order. (R. p. 2200.)

Hamilton, as usual, went to the records to settle this conflict between Moore and Cannon, and found from a batch of wheel reports that they was made by train order disregarding system or foreign cars. (R. p. 2258.)

He testified from his minute investigation of this subject, that the wheel reports gave the train order of cars, and it was the only source of that information.

Moore testifies the consists he puts in were not copies of the wheel reports. (R. p. 1782.)

It is evident that as to the movement of even the one fast Red Ball, we have no evidence of value of the amount of switching done on it.

Mr. Moore also testified at great length as to the various switching movements in the Little Rock terminals. It varies but slightly, so far as actual movement was concerned, from McCutcheon's, whose testimony was quoted when discussing the "bridge theory."

He shows some more service in industrial switching than in ordinary shifting for making up through trains; but there would be four movements on grain, into the elevator, and not less than four nor more than six out (practically all interstate), four movements on cotton (all interstate). The switching of cotton being equal to industrial switching; cotton seed products (interstate), four movements. For through trains being iced there would be two or three movements, on through cattle trains, two or three movements. (R. pp. 1781-1789.)

The attempt to rehabilitate the "bridge theory" was weak; more a confession and avoidance than anything else. The total result of it is: On some through trains there is less terminal handling than on the usual through and local trains, but there is on some of the large interstate movements, like grain, cotton, cotton seed products, and on through iced trains and cattle trains, more terminal service than the local or the ordinary through train ever receive.

Hamilton's demonstration of breaking up trains, stands, and considering the matter largely—not by exceptional cases either way, every car should be counted equal in the terminals. When the switch engine takes the cars in any train, local or through, it, on average conditions, renders the same service to make them ready to go out of the terminal, and all other like expense follow this service.

Minor Criticisms. There were many other minor criticisms of the State's plan, but we will not weary with further detail. The great items and bases applicable to them have been considered as fully, we hope, as the importance justifies. None of the other matters which were discussed would amount to anything in general results if these were sustained.

EXHIBIT 56.

The criticism of the State's plan was put in concrete shape in an exhibit ostensibly formed along the same line, correcting, it was alleged, the errors of the State and changing bases to suit the modified views of the plaintiffs. We have, throughout the evidence, facetiously termed this a caricature of the State's plan. For maintenance-of-way the overhead plan of apportioning general expense is adopted, and general expenses relieved of all share of maintenance-of-way expenses.

For maintenance-of-equipment, the State's plan is adopted excepting Rosing's table instead of the Wellington and Berry tables for starting and stopping is used, and for stopping eight instead of four for the local over the through (this evidently based on the mistake made by Gray and Ward as to this item, heretofore pointed out).

For terminal handling, the local cars are multiplied by six, and car miles adopted.

Changes are made in station handling, in that the transstate is eliminated, and 10 per cent added to the interstate for two handlings (a revival of the bridge theory).

Yard and terminal are divided on tons handled. Various other changes are made, some large, some small. On the passenger side various changes are made conformable to Rosing, in contradiction of Roberts and Alexander.

Train auditor expense is taken out of the classification the plaintiffs' exhibits made of it and charged direct to passenger, proportionately intrastate and interstate.

The effect of the more important of these changes we will explain in excerpts from Mr. Ludlam, who reviewed them at length:

Ludlam on Ton Basis For Terminal Handling. "Q. Mr. Ward, at page 613, criticises the method used by the State in apportioning the expense in terminals, of counting cars in and counting them out, and says that the proportion chargeable under this method, to through service, would be much greater than is actually the case, and adds this: 'The opinion of myself, or any other operating official, as to the excess cost of handling State over interstate business is on the basis of actual freight and not on the basis of the number of cars passing through the yards.'

I presume from Mr. Johnson's testimony this morning, that is very likely the foundation for his distribution of that expense on the ton basis, in his exhibit No. 56.

I will ask you what is your opinion of that basis which is used here in this exhibit, on the testimony of Mr. Ward, which I have read to you?

A. You are asking what I think of the basis used in exhibit 56?

Q. Yes, which I assume to be based on Mr. Ward's testimony, which I have read to you.

A. I think the basis is wrong, because it assumes that a ton of freight which moves 70 miles would have the same terminal service as a ton of freight that moves 224 miles.

Q. Those are the respective lengths of haul in this case on the Iron Mountain, I believe?

A. Of State and interstate.

I think I have already testified that, speaking generally, every ton of freight that passes through a terminal gets some handling at that terminal. I think also it is a matter of general railroad knowledge that the large and expensive terminals are required more and used more for the through business than for the local business.

Q. What effect would that length of haul have upon the proposition which you have referred to?

A. The effect, as that principle is used in exhibit 56, is that you charge as much for a terminal handling to the ton that moves 70 miles as you charge to the ton that moves 224 miles. You fail to take into consideration the most important element in distributing all expenses, and that is the use which is had from the expense incurred. The ton of freight that moves 70 miles, will, of course, not have the same use of the terminals as the ton of freight that moves 220 miles. Therefore, when you attempt to distribute your terminal expense on the tons handled, you arrive at a false conclusion and your figures are correspondingly unreliable." (R. pp. 2273, 2274.)

The most radical change was maintenance-of-way. The plaintiffs abandon the revenue and car mile and treat it as the accountants do direct expenses, and Mr. Ludlam thus explains the absurdity—if we may be pardoned the strong word, of this misapplication of an useful base.

"In exhibit 56, made up by the railroads—which I have somewhat facetiously called a "caricature" of the State's exhibit—they adopt many of the bases of the State, but in 'maintenance-of-way,' they have added that, as I understand it, to the general expense, and distributed that item of expense all through the other: I wish you would express your opinion on that. A.

Overhead Basis For Maintenance-of-Way.

I think it is wrong in principle; that there is no accounting practice or procedure that would justify it. It is a well known rule of accounting that you should distribute those expenses

that are specific against the use which it had from the expenses incurred.

In the case of the 'maintenance-of-way' expense, they should be distributed, in my judgment, both the proportion which is direct, and the proportion which is indirect—which has been referred to as being from 75 per cent to 90 per cent—against the use which is made of the 'maintenance-of-way,' and the use which is made of 'maintenance-of-way' is to run trains.

If it is true that only 10 or 25 per cent of the 'maintenance-of-way' expenses apply specifically to the operation of the trains over the track, then that 10 or 25 per cent, if it could be determined, should be apportioned specifically against those trains that cause the damage, and the remainder of the 'maintenance-of-way' expense—which would be the indirect expense of 'maintenance-of-way'—should be apportioned over the direct expenses of 'maintenance-of-way.'

Q. And that was done?

A. The result of our distribution approximately does that.

Q. I believe you have heretofore testified that in your accounting experience you have had a great deal of experience in auditing railroads: Did you ever come across a proposition like this that distributed things like "maintenance-of-way" through all these various accounts?

A. No, sir; the 'maintenance-of-way' is a specific expense and that would be one of the elements used to distribute 'general expenses.'

There is a certain element of your 'general expenses' that applies to your 'maintenance-of-way' expenses. A certain proportion of your President's and Vice President's salaries, the clerks in the Auditor's office, all apply to the 'maintenance-of-way' expenses, and the 'general expenses' would be distributed over all the elements of expense, which, as I stated, would include the 'maintenance-of-way' expenses, as well as the 'maintenance-of-equipment,' 'traffic' expenses; and 'conducting transportation' expense, but there is absolutely, as I see it, no possible reason for adding your 'maintenance-of-way' expenses to your 'general expenses,' and then attempting to distribute those over the balance.

In that way you do not apportion any of your 'general expenses' to your 'maintenance-of-way' expense.

Q. Why is that?

A. Because if you add your 'maintenance-of-way' expense to your 'general expense,' then you apportion them all over 'maintenance-of-equipment,' 'traffic expenses,' and your 'conducting transportation expenses,' which are all that are left of your operating expenses.

I am sure no man who is familiar with railroad procedure, would claim that the officers of a company—and by 'officers,' I mean the

general officers, higher executive officers—have nothing to do with the 'maintenance-of-way.'

I can imagine, for instance, in the case of the panic in October, 1907, the President of this company wiring from New York to reduce the expenses, and probably the first men that were laid off were some of the section hands who would be charged to 'maintenance-of-way.'

I am sure the records of the company, if carefully searched, would show very explicit instructions from the higher executives during October, November and December of 1907, affecting the 'maintenance-of-way' department.

Q. Take the other items in 'general expense' outside of the higher executive officers; take your legal department—claim department, auditor's department, and various items going to make up 'general expenses.' Do not all of them have more or less relation or duties to perform in regard to the way and maintenance?

A. Yes; they all have something to do with the 'maintenance-of-way' expense and it is proper that those expenses should be distributed over the 'maintenance-of-way.'

Q. As I understand you, under this 'grand, gloomy and peculiar method,' that our friends have invented, the 'maintenance-of-way' would escape all of that—all portions of that?

A. Under their method the 'maintenance-of-way' would all be distributed against the other operating expenses.

Q. Now, coming to the practical end of that proposition on this matter: what is the effect when you come to carry out such an abnormal method—as we view it—to distribute it in connection with such abnormalities—as we view them—as is done in 'terminal expenses.' What is the practical effect of that?

A. On the basis followed by exhibit 56?

Q. Yes.

A. The practical effect is to increase the cost of the State freight, as shown by exhibit 56.

In the first place, you improperly apply certain of so-called direct expenses—specifically illustrated in the case of repairs of yard locomotives; in the case of handling and in the case of expense of yard and terminal—by apportioning, as I have said before, as much of that expense to a ton of freight that moves only 70 miles, as you apportion to another ton of freight that moves 220 miles.

If you take all of your 'maintenance-of-way' expenses and distribute them over your direct expenses, the proportion that would apply to those specific items, you are also—in the case of your 'maintenance-of-way'—charging as much to a ton that moves 70 miles as you are to a ton that moves 222 miles. That is, to the extent that the repairs of yard locomotives and the expense of yard terminals represent the total expense over which you distribute your 'maintenance-of-way' expenses; you are claiming it costs as much to main-

tain your property to move a ton of freight 70 miles as it does to maintain your property to move a ton of freight 222 miles.

Q. Are there any other matters in that connection which I have not called your attention to? I want to go into it thoroughly and then pass on to something else.

A. I think that explains the inaccuracy of the principle." (R. pp. 2276-2278.)

We believe this a sufficient consideration of exhibit 56, and the plan upon which it is built to justify our characterization of it.

It starts with this impossibility of treating maintenance-of-way as a general expense, and relieving that great item of all general expense charges, and then proceeds to take such factors as some one or more witness may have suggested totally regardless of the weight of evidence on the subject where the charge was made.

We hardly expect it to be seriously urged upon the Court, but as it is part of the evidence, it must be treated as if earnestly presented.

On the whole subject of the State's plan, we have this to say: It was handicapped by having to use the train mile apportionment between freight and passenger, and by the use of the *The Plan* revenue basis for an apportionment of the property, *As a Whole*, and it earnestly endeavored to allow the utmost reasonable limit for all items of extra costs, and to work out fairly a distribution of costs between the two classes of traffic.

It would ill become a State to do this in any way than fairly, and with as just regard to the carrier as to the public, and that we believe was done by the able accountants who prepared this plan.

That its general plan is right was admitted by the learned trial Judge, and that it is substantially right in all of its details is proved by a decided weight of the evidence on every controverted issue.

Under this plan, the Iron Mountain's return on its property is 7.09 per cent after correcting the Pullman car mileage error, and when the inevitable correction is made to revenue or car mile basis for division between freight and passenger traffic, the return will be at least 9 per cent on the property, to say nothing of correcting the other errors included in the figures, like the Memphis expenses, etc.

This is a prosperous road in all its branches of service; if its management lopped off such excrescences as the Pratt Hotel and Bunch elevator favoritism and gave credit for the Express Company dividends in the past as well as in the present, and many other such items, its prosperity would be greater.

Under the facts here, we submit, in any view of the case, it is impossible for the plaintiffs to recover, because, with all the faults in their accounts, under any fair system of distributing the expenses of the two classes of traffic, both classes are making far more than a compensatory return. We sincerely submit that upon the whole evidence, the conviction is left that the intrastate is the more profit-

able traffic. Its revenue is double the interstate, and its extra expense, by the most liberal allowance, not as great as the higher revenue, and the road was paying 10 per cent annual dividends, during the period it complains that these rates are confiscatory.

THE CRITICS.

The able and successful railroad officers, Messrs. Carl R. Gray, Vice President of the Frisco Lines; Frank E. Ward, General Manager of the Burlington, and Frank Nay, Comptroller of the Rock Island, each appeared in the role of critic of the State's plan of solving these problems.

Judge Triebel says of the plan: "The scheme for obtaining these facts is new, never having been used by any accountants in any of the numerous rate suits which have heretofore been before the courts." And again: "But, in the opinion of the Court, the scheme itself furnishes the best method of solving this problem that has been called to the attention of the Court, depending, of course, upon the correctness of the numerous factors necessary to obtain accurate results." (R. pp. 2620-2621.) Hereafter we think we show that the departures from the scheme by the trial judge were erroneously made, but the point we now call attention to is the difference in point of view of the critics and the judge to the scheme as a whole.

To them it was all obnoxious; no good was in it and no good could come from it. Probably their most pointed arrows were aimed at using the car mile basis for maintenance-of-way expenses, and it was admitted by them to be in common use among the railroads of the country for this purpose. Railroad officers of great distinction had testified as to its common use and equity, and it has met the approval of this Court. The car mile basis to divide expenses between coaches and mail and express cars was to the critics intolerable, but the Vice President of one of the plaintiff roads and the Vice President of the Louisville & Nashville road had advocated it as fair and just for that very purpose before the Postal Commission of the United States.

On the technical questions as to distribution of injuries to freight cars from various contributing causes, the critics aligned themselves against a standard text book, and a paper, carefully prepared by an eminent engineer on the subject, which was submitted to a technical body considering this matter.

The critics placed themselves in direct opposition to the opinions of the plaintiffs' witnesses in chief and could see no inconsistency in the plaintiffs bringing on in chief witnesses expressing certain opinions material to this case and then bringing the critics on with contrary opinions then material to their case, but they saw many inconsistencies in the case of the State.

The critics were especially skeptical of views of accountants on these problems; it was to them problems only for the operating men.

Their criticism operated as a demurrer to an answer, reaching back to the complaint.

They attack the car mile and train mile basis as utterly unsound for apportioning expenses in a matter so important as a rate case; and the plaintiffs had apportioned their \$1,000,000 maintenance-of-way expenses between passenger and freight on the train mile basis and had obtained a million dollars of maintenance-of-equipment expenses for Arkansas from the other eight States in the Missouri Pacific System on the car mile basis.

Their demurrer-like criticism reached to the normality of the period of inquiry also. In fact, as critics-general they were as pronounced successes as they are as men of affairs.

AN ANALYSIS OF JUDGE TRIEBER'S OPINION.

While it is the duty of this Court to determine the facts relied upon as rendering unconstitutional State statutes and State action through a commission, unfettered by findings of masters or conclusions of trial courts, as was so clearly put by Mr. Justice Moody in *Knoxville v. Knoxville Water Co.*, 212 U. S. 1, yet weight will properly and naturally attach to the opinion of the trial judge; and this renders its review and analysis timely.

Specific findings of fact on controverted issues, deduced from conflicting evidence and made the predicate for a decree based upon them, would carry more weight than mere general conclusions of fact made in the course of an opinion whose office is to state the reasons why the particular decree has been rendered. In this case there was no specific findings of fact upon the numerous controverted issues; a final decree was rendered enjoining the enforcement of the rates attacked (R. p. 105) and an opinion filed wherein the judge discussed at length the questions of law and fact and stated his views upon them, resulting in an opinion that the rates in question were confiscatory, wherefore he had granted the perpetual injunction. This opinion is found in 187 Fed. Rep., p. 290, and in this record, beginning at page 2580.

The attitude of this Court towards the opinion of the trial court may be found stated in this excerpt from *Loeb v. Trustees of Columbia Tp.*, 179 U. S. 472:

"Neither is the opinion of the Court a part of the record. Our rule requires a copy of any opinion that is filed in a cause to be annexed to and transmitted with the record, on a writ of error or an appeal to this Court; but that of itself does not make it a part of the record below. That language is not to be taken too broadly or without reference to the particular case then before the Court. What was said may undoubtedly be taken as an adjudication that the opinion of the Court can not, under our rule, be referred to for the purpose of ascertaining the evidence or the facts found below upon which

the judgment was based; but not as precluding this Court from looking into the opinion of the trial Court for any purpose whatever."

The meaning and application of this point of this decision was recently considered in majority and minority opinions in *Memphis v. Cumberland Tel. & Tel. Co.*, 218 U. S. 624. We understand, from them, however, that the principle is unshaken that the opinion can not be looked to for the purpose of ascertaining the evidence, or the weight of evidence, or the facts found; but may, and should, be looked to for any purpose whatever which would aid the Court in reaching a correct conclusion on either the law or facts of the case. See also *Egan v. Hart*, 165 U. S. 188. Doubtless in performance of the onerous and delicate duty of weighing the evidence as to whether it is sufficiently clear and decisive to invalidate the State's statutory and Commission-made rates, the Court will turn to the opinion for what assistance may be received from it; and, in considering it, your attention is invited to what we classify as the major and minor errors therein.

THE MAJOR ERRORS IN THE OPINION.

He uses the revenue basis to apportion the property to the State, but we will not rediscuss that subject, as we have presented our views

The Revenue Basis to Apportion Expenses. as fully as we are capable of doing heretofore and it is only to his errors in apportioning expense to which this discussion is devoted. (1) He uses the revenue basis to apportion maintenance-of-way expenses, both freight and passenger, between State and interstate traffic; and uses it also to apportion other items of expense between those classes of traffic.

He says (R. p. 2608): "The straight revenue theory as advanced by the learned counsel and accountants of the railroads is clearly wrong, as none of them takes into consideration the increased rates charged for the intrastate traffic."

When considering maintenance-of-way expenses, he says (R. p. 2623): "The Court is of the opinion that the straight revenue basis will get more accurate results. The difference in intrastate and interstate rates will be taken care of by proper allowance to be made in the final calculation."

Passing, for the moment, the allowance referred to, which is based on an assumption that the difference in rates is ascertained and equalized—an utter impossibility; but even so, the fundamental error of the revenue basis is not removed.

One of the insuperable objections to the revenue basis is its failure to take account, in this case, of the higher intrastate revenue, producing a proportionately higher allotment of expenses to the intrastate, but if that were overcome, and the revenue per ton per mile intrastate and interstate identical, still the revenue basis would

have no value (even as admitted by its advocates) unless the rates of both classes were based on the cost of the service, and a relation, based on cost and reflected in the rates, existed between intrastate and interstate traffic. We will not weary the Court with repetition of the presentation of, as we believe, a great preponderance of the evidence which shows that, so far as the interstate rates prevailing in Arkansas are concerned, that they are not based upon or reflect the cost of service, and that no reduction exists between those rates and the Commission tariff.

The eradication of the one sound objection to the revenue basis leaves untouched these fundamental objections to it.

The fact that the revenue per ton per mile intrastate and interstate may be the same, or made so by a process of equalization, will not make the revenue an applicable factor with which to apportion the expenses between the two classes of traffic unless the rates producing the respective revenues, whatever it may be, is based on cost and there is a proper cost relation between the two. Whether intrastate or interstate revenue per ton per mile is the higher will depend on several concurring causes; the rates fixed interstate in that locality by the railroads and the rates fixed intrastate by the particular State, being the principal ones. But whether the rates of either traffic reflect the cost and are adjusted to each other so that they may be used as yardsticks of equal reliability is quite another question. If an unfortunate lunatic is suffering with tuberculosis and has an attack of appendicitis, the removal of the appendix will likely cure the latter ailment (or kill the patient), but is not likely to restore his mentality or destroy the bacilli.

(2) He attempts to find the difference in intrastate and interstate rates. His discussion of this subject is found at pages 2613-2619 of

State and Interstate Rates and Revenue. This record. He concludes that, while the freight revenue per ton per mile intrastate on the Iron Mountain is 98 per cent higher than the interstate and on the Southwestern 141 per cent and the passenger 3.48 per cent, that the intrastate freight rate

is only 50 per cent higher than the interstate, including the transstate, and on passenger the rates are the same, while the revenue is 3.48 per cent higher. Many of the matters referred to in the discussion we fail to find in the evidence in this record; but conceding, *gratia argumenti*, that they are all established facts, we contend: (a) That it is a mere guess, not supported by such evidence as is referred to, as to the difference in the rates, and (b) that the difference in rates is not the question. The plaintiffs seek to divide the expenses between intrastate and interstate by the revenue produced from each class, and not by the rates.

(a) That the ascertainment of the difference between State and interstate rates is a mere guess, not susceptible on the evidence in this record of approximation, is unquestionably the case.

Judge Trieber refers to two exhibits put in by Mr. Kimbell. After Judge VanDeventer granted the injunctions in this case, the railroads put into effect both intrastate and interstate tariffs, untrammeled by State regulation. These tariffs of their making were in effect in January, 1909. In its efforts to establish the relation existing between State and interstate rates as understood by the railroads when they had the making of both, a statement of the January revenue, intrastate and interstate was called for. This is exhibit "A" (original page 5758). Mr. Kimbell made a calculation based on that exhibit, comparing the revenue with the six months' period under inquiry, when the State made the intrastate and the railroads the interstate, and he testified that the interstate had been increased 9.4 per cent and the intrastate 96.1 per cent. (R. p. 770.)

In rebuttal, Mr. Kimbell put in exhibit 58, a comparison of rates if the Commission tariff had been in effect during January, 1909, and it showed that while the intrastate revenue was increased 96.1 per cent, the rates were only increased 48.18 per cent. (R. p. 2078.) No showing was made on interstate. The conclusion that Judge Trieber reaches is that it is impossible to adopt revenue for the purpose of ascertaining the difference in the rates. (R. p. 2614.) Revenue represents result of rates, not the rates themselves, and it will fluctuate by different movements without fluctuation in rates is certain. As the unanimity of opinion is that the State and interstate traffic moves hand in hand and is as alike as Siamese twins, if it were possible to get a comparison with preexisting rates interstate for the same period some tangible basis might be reached. Mr. Kimbell was requested to furnish complementary data of the interstate when he furnished the intrastate and declined on account of the labor. (R. pp. 947, 997.)

Take two extremes—coal, a low-grade commodity, and merchandise, a high grade. The coal intrastate and interstate will naturally move at the same season and the merchandise intrastate and interstate has no cause for difference in time of movement, and every cause for uniformity of movement. Apples from the fruit region of Northwestern Arkansas will go to market in Arkansas and interstate points at the same time.

Speculation as to difference in rates based on rate increases or decreases in intrastate traffic is futile when unaccompanied by data of the other class.

It is utterly impossible to compare State and interstate rates except theoretically. Take some tariffs and work out a careful comparison and then a little examination into movements under the two will show the comparisons to be worthless.

A striking illustration of that is found in Mr. Perkins' exhibit 37 and 37-A. (R. pp. 2406-2409.) These exhibits were to show, along border points, that the interstate rates were higher than intrastate and to establish a relation between State and interstate rates.

Judge Trieber refers to these rates as if they were of value. (R. p. 2615.) The judge evidently failed to read Mr. Lincoln's testimony about these tariffs, brought into the case by the plaintiffs themselves. Mr. Lincoln's attention was called to these tariff selections by the plaintiffs' counsel, and asked to state what they showed to be the relation between those rates; and, taking up one by one the rates, showed that the commodities do not move under the interstate rates set forth, but under commodity rates, and concludes as follows: "The comparisons are not those upon which you can very well base a conclusion, as to the interstate or even as to the State rates in other points, except as a paper proposition." (R. p. 972.)

No one controverted Mr. Lincoln's disposal of these paper rates and their usefulness there ended; and yet the Court, evidently overlooking that they did not represent real movements, considered them in his efforts to find the difference in the two sets of rates.

In another effort to find this difference, the judge tells of going over the minimum carloading prescribed in the Western classification and in the Commission tariff, item by item, and finding a difference of 40 per cent in favor of the interstate. (R. p. 2619.) But what avails that? There is no evidence of what freight has moved under the weights prescribed in the Western classification. Undoubtedly some does; much does not. All the Texas traffic moves under the Texas rate exception sheets to it; every State has its exceptions to it. The Official and Southern classification territory (all territory east of the Mississippi) have different classifications and minimums for all traffic originating in their respective territory from those in the Western. Interstate tariffs have many exceptions to the Western classification. All these facts are stated by the plaintiffs' witness, Mr. Becker, the chairman of the Western Classification Committee. (R. pp. 738-746.) How much of the interstate traffic in or through Arkansas has moved under the Western classification of minimum of carloading is left so absolutely an unknown quantity that even a guess would be impossible. The judge makes explanation of the existence of zone rates, Texas common point rates, etc., and quotes Mr. Perkins' justification of the latter (page 2615), but we are not concerned with the why of these rates, but as to their existence as a fact proving the unreliability of revenue from them to measure cost. But the very rates there explained, the transstate lumber, grain and Texas common points, illustrate the impossibility of ascertaining the difference between interstate and intrastate rates. Hardly any two similar movements of these commodities bear the same rate owing to different divisions of it with connecting lines, while each haul through Arkansas and its attendant cost is identical.

The Court accounts for difference in revenue of the plaintiffs' roads under the same tariffs as due to differences in low grade and high grade commodities carried by them. Possibly that may be true, and, if so, is another obstacle, under the evidence in this record,

to establish the difference between rates intrastate and interstate, because the rates on the low grade commodities are no better guides than on the high grade like the merchandise rates to Texas. Take coal from the Illinois fields to Little Rock and adjacent territory for \$2.25 per ton and to Louisiana points, 150 miles longer haul, for \$2.00 per ton; and on the other hand, the Arkansas coal moves into Little Rock from a zone 50 miles in extent for \$1 per ton and out of Little Rock on a graduated distance scale. With which interstate rate will the comparison as made, the interstate to Arkansas points or the transstate to Louisiana points? No system of averages can be obtained as there is no data of the relative amount of the traffic to each of these consuming territories, other than it is a considerable movement. The expert rate men, though often requested to estimate or define the relation existing between State and interstate rates, fail to do so; and if they can not establish what the relation is or should be, how can the difference between the two be discovered?

The Texas Commission is calling on the carriers for data as to revenue and cost by commodities, intrastate and interstate. (R. p. 1106.) When reliable statistics along this line are furnished then an approximate, if not accurate, measure of difference in rates may be found.

(b) The difference in the rates, intrastate and interstate, is not the question in this case, but the difference in the revenue. It is the revenue—not the rates—which is used by the plaintiffs as the factor with which the expenses between the classes of traffic is apportioned by the plaintiffs in their exhibits. Therefore whatever may be the real difference in the rates is only of academic interest.

If the intrastate is 50 per cent higher than the interstate, as thought by the judge, that has not so far entered into their case, but the revenue resulting from these rates as a whole has been used by them to apportion these expenses, and that revenue is 98 per cent higher than the interstate, and therefore, on that account, apportions correspondingly to the intrastate that much more expense than would be apportioned if the revenue were the same. The issue is on the apparently confiscatory return shown by the plaintiffs using a factor, which, by reason of being thus much the higher than the other factor, assigns this much unreal expense to the intrastate. It may be that the extra expense is 50 per cent or 500 per cent; that is not the question now; the extra cost is added after the basic apportionment to the State is made on the revenue basis; and, in order to get that basic apportionment to which the extra cost must be added, there is used a factor producing unreal expense to the intrastate. Whether the basic sum has unreal expenses represented by 50 per cent or 98 per cent is one of degree; the fallacy of the principle is the same. The effort to find the difference in rates is an effort to correct the injustice to the State, and the finding of 50 per cent higher intrastate rates, convicts the result of the plaintiffs' case to be to that extent wrong.

But the whole theory of trying to find difference in the rates expressed in percentages other than in the revenue resulting from these rates is a mistake.

Thousands of rates are found in filed tariffs; until a shipment moves under one of them, it enters not into this subject. It is not a question of possibilities, but of actualities. One shipment only may move on a given rate in a year and a thousand a month on the next one. This is equally true in either traffic. These dormant rates afford no basis of comparison. A light movement under one and heavy under another may make a difference one way on rates and the other way on revenue. The measure of rates to determine compensation or confiscation is the revenue produced from them, not the rates themselves. The use of the factor on trial to measure the expense is one of the just criticisms of the revenue basis. (R. p. 1482.) The effort to correct the inequality and injustice of the revenue basis only results in minimizing it to whatever arbitrary figure the mind may rest upon as representing the difference in the two classes of rates.

The allowance in favor of the State, so far as we can discover, in the calculations made by the Court and those by the accountants under his direction, has not been given. The Court selected bases and directed the accountants to calculate upon them; that resulted in showing 201.5 per cent extra intrastate freight cost on the Iron Mountain; and to that he added 8.5 per cent and 10 per cent for the intrastate passenger. (R. p. 2630.) In reaching this result, the accountants used the revenue basis for several of the large items of expenses, as directed by the Court; and the injustice of the excessive revenue is, so far as we can discover, not corrected in the results obtained by this method. The system is abstruse, and, we may be mistaken in this statement, but, after careful examination, believe it is correct; and if so, it is doubtless an oversight because the Court intended to make this allowance.

(3) The judge used the train mile division between freight and passenger expenses of maintenance-of-way. In our chapter devoted to *Train Mile Division Of Freight and Passenger Expenses* this question, we showed that he condemned it utterly, and yet, doubtless, unwittingly, accepted the apportionment to each branch of the traffic so made. Thereby the intrastate is burdened with \$101,500 more expenses than if he had used the revenue basis, and far more than that, if he had used the car mile basis.

This error likely occurred in this way: The railroads used it, and the State took the amount thus apportioned to freight and passenger and begun their work of apportioning between intrastate and interstate at that point. This was fully explained in the evidence, and no one for the State approved it and several on both sides condemned it.

If the State's plan had been accepted this would have been "harmless error," as the return shown was compensatory; but when both plans were rejected and one of his own formulated, then the basis which he expressly condemned (R. pp. 2608, 2623) should not have been used for this purpose.

At one place he says: "The train mile basis is conceded by all as the least accurate." (Rec. p. 2608.) And when discussing maintenance-of-way expenses, says: "In view of these facts (the large proportion due to weather and time) any attempt to apportion this item of expense on the ton, car or train mileage would be an injustice to the roads." (R. p. 2623.)

(4) The rejection of the statistics of the test months and substitution of arbitrary percentages for the contents of the local and through trains, was, in our opinion, grave error.

Rejection of Test Months Statistics. We have presented at great length the whole evidence on this subject and will not repeat it. The Court says that the most serious objection to the

State's plan is that the calculations are based on the business of one month only. (R. p. 2621.) The local and through trains only are based on one month's performances, the percentages for that month applied to the six months' period, and the difference in a larger ton-mileage adjusted. This latter was criticized, but Mr. Johnson, the railroad accountant, admits the criticism only goes to using one month; not to the method or its accuracy in adjustment. (R. pp. 2236, 2237.) In view of the short period put in by the railroads, and that they put in these test months as representative of it, and the proved normality of that month to the six so far as car and train movements were concerned and the relative State and interstate traffic, we do not question for a moment this Court will accept them. Instead of the actual figures found from these exhaustive tests, the Court assigns to the local train 40 per cent interstate and 60 per cent intrastate, to the through 99 per cent interstate and 1 per cent intrastate.

If possible for the error to be graver than rejecting the test on the Iron Mountain, it was in rejecting the test on the Southwestern. It was all made by the railroads; its accuracy questioned by no one and no congestion even alleged of that month, October, 1908.

EXHIBITS CORRECTING THE MAJOR ERRORS.

At our request, Messrs. Haskins & Sells have prepared for this brief exhibits "DD", "EE," "FF," which exhibits accept Judge Trieber's basis and findings throughout, except in the particulars herein set out. We even accept, for this purpose, the (1) major error, the revenue basis for property, without deductions; and accept the revenue basis for the expenses where it was applied with the 50 per cent excess allowed, as he said should be on the freight and 3.48

per cent on the passenger. Our correction of his base on this, merely makes clear the allowance of the 50 per cent excess of the intrastate, for which he says credit must be taken. The division of maintenance-of-way expenses between freight and passenger is on the revenue basis instead of train mile basis. It can hardly be doubted that, in the face of the condemnation of the train mile basis, that the Court would have used it if his attention, at the time, had been called to the fact that the sums apportioned where he began his plans were obtained through that basis. Certainly when he decides on the revenue basis as the most accurate between interstate and intrastate, it necessarily follows that it is also the most accurate between freight and passenger.

The actual percentages of October of the interstate and intrastate traffic found on the local and through trains are used instead of the percentages assumed for this purpose by the Court. Except in this respect, this exhibit only carries out the rules of apportionment and findings of fact indicated by the Court as the method to pursue in obtaining the relative cost and return on the property. In taking the actual percentages of October, instead of the assumed ones, we are merely following what we confidently believe this Court will adopt in that regard.

This exhibit may be examined, therefore, as one applying the methods and rules and findings of the Court, with one exception.

COMMENTS REGARDING EXHIBIT "DD," EXHIBIT "EE," EXHIBIT "FF."

In these exhibits, the expenses have been distributed on bases laid down by Judge Trieber in his opinion, dated May 3, 1911, viz:

First. The total maintenance-of-way and structure expenses and the total value of the property have been divided between "freight" and "passenger" on the basis of the total revenue derived from each class of service as shown by exhibit No. 3.

Second. The "freight" and "passenger" expenses have, in turn, been divided between State business and interstate business on various bases prescribed by Judge Trieber, as follows:

FREIGHT.

The maintenance-of-way and structure expenses applicable to the freight business have been divided between State and interstate on the basis of the earnings derived from each class of business after equalizing the revenue by eliminating from the State revenue the 50 per cent excess of State revenue over interstate revenue determined by Judge Trieber.

The figures given in Judge Trieber's opinion covering the division of maintenance-of-equipment expenses between State and interstate have been used.

Traffic expenses have been divided on the revenue basis after equalizing such revenue by eliminating from the State revenue the 50 per cent excess of State revenue over interstate revenue determined by Judge Trieber.

The figures given in Judge Trieber's opinion covering the division of the transportation expenses have been used except that in the case of "other train expenses" divided by Judge Trieber on a revenue basis, allowance has been made for the excess of 50 per cent of State revenue over interstate revenue. The item of "supervision and general" under transportation expenses has been apportioned on the basis used by Judge Trieber, but the amounts are somewhat different on account of the change in the direct charges resulting from the adjustment of the figures for "other train expenses."

General expenses have been divided on the basis used by Judge Trieber, but the amounts apportioned to the different accounts have been changed slightly as a result of the corrections made in the preceding figures already mentioned. It will be noted that under this method of distribution, no proportion of the general expenses is charged to "maintenance-of-ways and structures."

The division of the total expense of "local" and "through" trains between State and interstate has been made on the basis of the freight actually handled (local trains 26 per cent State, and 74 per cent interstate, and through trains 4.96 per cent State, and 95.04 per cent interstate) instead of on the basis used by Judge Trieber (local trains 60 per cent State, and 40 per cent interstate, and through trains 1 per cent State, and 99 per cent interstate).

Taxes and rentals have been apportioned on the basis followed by Judge Trieber after making allowance for the excess of 50 per cent of State revenue over interstate revenue as determined by Judge Trieber.

Hire of equipment has been apportioned on the basis followed by Judge Trieber by making an allowance of 30 per cent against the State freight, to cover the additional cost of State traffic; after first equalizing the revenue by allowing for the 50 per cent excess of State revenue over interstate revenue as determined by Judge Trieber.

PASSENGER.

The operating expenses applicable to the passenger business have been apportioned between State and interstate and miscellaneous on the basis followed by Judge Trieber as stated in his opinion by first eliminating from the State revenue the excess of 3.48 per cent of State revenue over interstate revenue as determined by Judge Trieber and then by adding 10 per cent to cover the "10 per cent additional cost" of doing State business as determined by Judge Trieber.

Taxes, rentals, hire of equipment, dining car deficit and value of property have been apportioned on a revenue basis after equalizing such revenue by eliminating from the State revenue the excess of

STATE OF ARKANSAS—RATE MATTER

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Freight Operating Expenses in Arkansas—For the Six Months Ended December 31, 1907—Divided Between Local and Through Train Service and Between Intrastate and Interstate Business.

	TRAIN COSTS	OTHER COSTS			
	Local	Through	Intrastate	Interstate	Total
1—MAINTENANCE OF WAY AND STRUCTURES,			\$ 72,409.45	\$ 701,195.77	\$ 773,605.22
2—MAINTENANCE OF EQUIPMENT:					
(a) Locomotives:					
(1) Yard,	\$ 13,453.83	\$ 55,681.97			\$ 69,135.80
(2) Road,	43,733.35	70,807.25			114,540.60
(b) Freight Cars,	94,684.51	318,695.22	\$ 16,561.23	\$ 47,954.68	477,895.64
(c) Supervision and General,	14,202.89	41,625.12	1,546.48	4,484.80	61,859.29
Total Maintenance of Equipment,	\$166,074.58	\$ 486,809.56	\$ 18,107.71	\$ 52,439.48	\$ 728,431.83
3—TRAFFIC EXPENSES,			\$ 8,305.54	\$ 80,428.88	\$ 88,734.42
4—TRANSPORTATION EXPENSES:					
(a) Station Expenses,			\$ 99,198.00	\$ 134,428.94	\$ 233,626.94
(b) Yard and Terminal Expenses,	\$ 57,085.42	\$ 236,262.07			293,347.49
(c) Fuel and Locomotive Expenses, and Road, Enginemen and Trainmen,	238,060.24	451,170.33			689,230.57
(d) Enginehouse Expenses,	15,194.55	38,439.58			53,634.13
(e) Other Train Expenses,			12,384.48	119,928.39	132,312.87
(f) Loss and Damage—Freight,			30,972.03	96,537.35	127,509.38
(g) Supervision and General,	9,415.15	22,018.19	4,324.75	10,644.83	46,402.92
Total Transportation Expenses,	\$319,755.36	\$ 747,890.17	\$146,879.26	\$ 361,539.51	\$1,576,064.30
5—GENERAL EXPENSES,	\$ 28,850.02	\$ 77,717.88	\$ 7,166.23	\$ 18,484.11	\$ 132,218.24
6—TOTAL OPERATING EXPENSES,	\$514,679.96	\$1,312,417.61	\$252,868.19	\$1,214,087.75	\$3,294,053.51
7—DIVISION OF TRAIN COSTS BETWEEN INTRASTATE AND INTERSTATE BUSINESS:					
(a) Local Trains:					
(1) Intrastate Freight—26.00% of Total,	133,816.79*		\$133,816.79		
(2) Interstate Freight—74.00 of Total,	\$380,863.17*			\$ 380,863.17	
(b) Through Trains:					
(1) Intrastate Freight—4.96% of Total,	65,095.91*	65,095.91			
(2) Interstate Freight—95.04% of Total,	\$1,247,321.70*			1,247,321.70	
8—TOTAL COST OF INTRASTATE AND INTERSTATE BUSINESS,			\$451,780.89	\$2,842,272.62	\$3,294,053.51

EXHIBIT "DD"

*In Red Ink on Original Exhibit.

STATE OF ARKANSAS—RATE MATTER

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Passenger Operating Expenses in Arkansas—For the Six Months Ended December 31, 1907—Divided Between Intrastate, Interstate and Miscellaneous Business

1—MAINTENANCE OF WAY AND STRUCTURES,.....	\$ 281,071.29
2—MAINTENANCE OF EQUIPMENT:	
(a) Locomotives,.....	\$ 166,461.61
(b) Passenger Train Cars,.....	87,099.15
(c) Supervision and General,.....	58,578.98
Total Maintenance of Equipment,.....	\$ 312,134.74
3—TRAFFIC EXPENSES,.....	\$ 58,276.08
4—TRANSPORTATION EXPENSES:	
(a) Station Expenses,.....	\$ 59,381.44
(b) Yard and Train Expenses,.....	549,069.76
(c) Loss and Damage—Baggage,.....	1,653.31
(d) Supervision and General,.....	40,476.06
Total Transportation Expenses,.....	\$ 650,580.57
5—GENERAL EXPENSES,.....	\$ 160,767.19
6—TOTAL OPERATING EXPENSES,.....	\$1,457,829.87

Above Expenses distributed between State, Interstate and Miscellaneous on the revenue basis after equalizing the excess of 3.48% realized from State business over Interstate business and allowing for 10% excess cost of State business over Interstate business as per Judge Trieber's opinion as follows:

STATE,.....	\$ 836,542.20 ÷ 103.48% = \$808,409.55 + 10% = \$ 889,250.50 = 48.08% of \$1,457,829.87 = \$ 700,924.60
INTERSTATE,.....	568,476.21 = 30.74% of 1,457,829.87 = 448,136.90
MISCELLANEOUS,.....	391,869.47 = 21.18% of 1,457,829.87 = 308,768.87
TOTAL,.....	\$1,796,887.88 = \$1,849,596.18 = 100.00% of \$1,457,829.87 = \$1,457,829.87

EXHIBIT "EE"

STATE OF ARKANSAS—RATE MATTER
ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY

Statement of Revenue, Expenses, Net Earnings, and Return upon the Value of the Property in Arkansas—For the Six Months Ended December 31, 1907—With Miscellaneous Earnings, Taxes, Rentals, Hire of Equipment, Dining Car Deficit, and Value of Property Divided Between the Various Classes of Business on a Revenue Basis.

	FREIGHT			PASSENGER				
	State	Interstate	Total	State	Interstate	Miscellaneous	Total	Total Business
1—REVENUE:								
(a) Freight, Passenger, and Miscellaneous Passenger, .	\$ 640,248.17	\$ 4,133,210.33	\$ 4,773,458.50	\$ 836,542.20	\$ 568,476.21	\$ 391,869.47†	\$ 1,796,887.88	\$ 6,570,346.38
(b) Miscellaneous Freight, .	16,469.41	106,345.00	122,814.41	.	.	.	.	122,814.41
Total Revenue, .	\$ 656,717.58	\$ 4,239,555.33	\$ 4,896,272.91	\$ 836,542.20	\$ 568,476.21	\$ 391,869.47†	\$ 1,796,887.88	\$ 6,693,160.79
2—EXPENSES:								
(a) Operating Expenses .	\$ 451,780.89	\$ 2,842,272.62	\$ 3,294,053.51	\$ 700,924.60	\$ 448,136.90	\$ 308,768.37	\$ 1,457,829.87	\$ 4,751,883.38
(b) Taxes, .	15,251.72	147,693.97	162,945.69	27,065.54	19,027.68	13,119.27	59,202.49	222,148.18
(c) Rentals, .	1,505.51	14,579.05	16,084.56	2,670.69	1,878.25	1,295.01	5,843.95	21,928.51
(d) Hire of Equipment, .	21,216.27	157,975.19	179,191.46	472.53*	332.33*	229.13*	1,033.99*	178,157.47
(e) Dining Car Deficit, .	.	.	.	695.07	488.83	.	1,183.90	1,183.90
Total Expenses, .	\$ 489,754.39	\$ 3,162,520.83	\$ 3,652,275.22	\$ 730,873.37	\$ 469,199.33	\$ 322,953.52	\$ 1,523,026.22	\$ 5,175,301.44
3—NET EARNINGS, .	\$ 166,963.19	\$ 1,077,034.50	\$ 1,243,997.69	\$ 105,668.83	\$ 99,276.88	\$ 68,915.95	\$ 273,861.66	\$ 1,517,859.35
4—ASSESSED VALUE OF PROPERTY DOUBLED, .	\$1,372,650.77	\$13,292,421.58	\$14,665,072.35	\$2,434,991.81	\$1,712,486.58	\$1,180,731.26	\$5,328,209.65	\$19,993,282.00
5—PERCENTAGE OF NET EARNINGS TO VALUATION, .	12.16%	8.10%	8.48%	4.34%	5.79%	5.84%	5.14%	7.59%

SUMMARY

	TOTAL STATE BUSINESS	TOTAL INTERSTATE BUSINESS	TOTAL MISCELLANEOUS BUSINESS
NET EARNINGS:			
Freight, .	\$ 166,963.19	\$ 1,077,034.50	
Passenger, .	105,668.83	99,276.88	\$ 68,915.95
Total, .	\$ 272,632.02	\$ 1,176,311.38	\$ 68,915.95
ASSESSED VALUE OF PROPERTY DOUBLED:			
Freight, .	\$1,372,650.77	\$13,292,421.58	
Passenger, .	2,434,991.81	1,712,486.58	\$1,180,731.26
Total, .	\$3,807,642.58	\$15,004,908.16	\$1,180,731.26
PERCENTAGE OF NET EARNINGS TO VALUATION, .	7.16%	7.84%	5.84%

†INCLUDES:	
Dividend from Pacific Express Company, .	\$15,984.00
Rents from Passenger Station at Little Rock, .	2,100.00
Total, .	\$18,084.00

*In Red Ink on Original Exhibit.

3.48 per cent of State revenue over interstate revenue determined by Judge Trieber.

The additions made by the Court raises the return on the whole property to 7.59 per cent instead of 7.50 per cent under the former exhibits. This is distributed intrastate 7.16 per cent, interstate 7.84 per cent, mail and express 5.84 per cent.

There are many bases used in this formula which we earnestly insist are unjust to the State, and will be briefly referred to as minor errors. With them included, however, this return of 7.16 per cent is not confiscatory. With them or any of them modified to the relief of the State these percentages of the return will be increased and some of them are quite large items and will materially raise this return if corrected.

MINOR ERRORS.

(a) The omission to charge the Iron Mountain with fair rent of the Bunch elevator; the charge of fines for crimes to operating expenses; the inclusion of Memphis and Fort *Errors in Exhibits Heretofore Discussed.* Smith terminal expenses, the charge of any part of the various other matters heretofore discussed under the head of Errors in Exhibits are referred to, without repetition, as part of the errors now under discussion.

(b) Starting and stopping injuries have been discussed, and also the error of assuming that through trains only stop every 35 miles, has been presented.

(c) Terminal handling of transstate cars. While rejecting the "bridge theory," the Court mistakenly, we believe, works out a difference in their favor. We will not rediscuss the evidence which we have heretofore presented on that issue. *Terminal Handling.* The judge quotes from the testimony of Moore as to certain switching of a train at Little Rock, but that was Red Ball No. 55, the fast preferred merchandise train, which half a dozen trainmen swore was not typical of the through trains.

The judge refers to Mr. Lincoln and Mr. Parker, saying that transstate freight ought not to be charged with terminal expenses.

In distinguishing intrastate, interstate and transstate, Mr. Lincoln stated that there would be no terminal service in the State on the transstate. (R. p. 965.)

No one questions this for a moment; the word is used in many senses; in this one meaning the origin and destination of the shipment.

There is a terminal service in division yards which is thoroughly explained by Mr. Lincoln, Mr. McCutcheon, Mr. Moore, and proved by Mr. Hamilton's records; that is the breaking up of trains there and switching them and remaking trains for them.

These are called yard and terminal expenses under transportation expense and also yard locomotive expenses under maintenance-of-equipment expenses. (See exhibit "M," p. 2521.) These are the expenses complained of when the State counts the transstate cars with the other cars handled in the division point.

Mr. Parker called attention to the difference between terminal handling and station handling, and says that transstate will receive same station service in the State, checking cars, recording passing cars, telegraphing, etc., but not as much as intrastate. (R. p. 1171.)

These expenses are (a) under transportation in the State's exhibits and are divided on the ton basis. The transstate tons are 33 per cent (ton-mileage 51, exhibit 26). It would be unfair to charge this traffic equally with one for the interstate and two for the intrastate if it were not for compensating equivalents. Memphis and Fort Smith tonnage, grain, cotton and lumber, are only counted as one ton as against two intrastate, and they are two (and grain and cotton often three); so by large and small the State's witnesses say where the interstate is overcharged on this item for transstate it more than gains on undercharges for these. We have gone into this tediously because the judge's discussion of these items at pages 2026 to 2028, shows a misconception of the plan adopted by the State. This confusion is followed into the calculations made by the accountants under his direction. (R. p. 2641.) The State's plan for expenses of repairs to yard locomotives is adopted under maintenance-of-equipment, but when the engineer and fireman running them have to be paid, under yard expenses of "conducting transportation," they are split into various percentages, dependent on amount of station service received at the terminals; whereas, the item is not for station service, but for handling the cars at division points where yard locomotives are maintained. He cuts out all the transstate, 51.16, under this. Even the author of the bridge theory admits that the engines and cabooses were changed at division points.

(d) The Court says: "The accountants for all parties agree that these (traffic) expenses should properly be divided on a straight revenue basis." (R. p. 2628.) Mr. Wharton testifies *Traffic Expenses*. that he had used this basis, but it was not correct and unfair to the State, but owing to the way the statistics were kept he could get no actual apportionment of it; and he was not able to work out any correct method as the books then stood. He merely used the railroad basis in the absence of data for a better one.

He said that the State traffic being largely noncompetitive and not requiring the service of traffic men generally, this basis unduly burdened the State. (R. p. 1010.) Mr. Ludlam testified to the same effect and several other of the State's witnesses, and so did Mr. Ward. (R. p. 1890.)

(c) The Court says station expenses should be divided on the ton mileage charging the intrastate with six terminal handlings.

(R. p. 2628.) What connection there is between *Station Expense* expenses at stations and the mileage between them is incomprehensible to us. We have heretofore discussed this at length.

The Court ascertains in some way the cost of fuel and wages per train mile, on the through and on the local, and a difference of 47 per cent. Mr. Kimbell got accurately the fuel and wages for *Fuel and Wages.* October, 1908, on his road and Mr. Hamilton found the wages for October, 1907, on the Iron Mountain. The records of the Iron Mountain were so kept that for a period in the past the actual fuel consumed for the month was unascertainable. Mr. Doddridge had been General Manager of both of these roads and, when he was on the stand in behalf of the plaintiffs, he was asked as to whether the actual fuel consumption on local and through trains on the Southwestern would be applicable to the Iron Mountain and said, "I presume that those proportions would be applicable in a general sense." (R. p. 515.)

Mr. Roberts also testified the test on the one road would fairly represent the other in this respect. (R. p. 2114.)

We submit that actual results should be accepted.

(g) The item of other train exepness, such as expense for signaling, wrecks, cattle killed, etc., the State apportioned on the train *Other Train Expenses.* mile basis; believing that such items as these were incurred by the trains as a whole and in proportion to the miles it ran. This is one item to which the train mile would naturally apply. The Court adopts the revenue basis for this. (R. p. 2629.)

(h) The Court charges 30 per cent extra to the intrastate for hire of equipment on the ground that the cars used in local trains are delayed much more by reason of slow schedules, and *Hire of Equipment.* shippers allowed 48 hours for unloading. (R. p. 2630.) If this was a charge to the local train and apportioned according to the traffic, it might not be so far amiss as charging it to the intrastate, which is done, and that on the revenue basis. (R. p. 2646.) That in proper operation there is more delay to equipment on local trains than through is unquestionably the case; but, say at Morrilton, there is no more delay on a car of merchandise delivered there which came from St. Louis than a similar car which came from Little Rock. But ideal conditions do not prevail on this road, and the local should not be charged with extra cost in this matter in the face of the undisputed record evidence that the transstate cars in passing through the State were delayed on an average in March, 1907, four days over schedule, and in October, 1907, five days over schedule.

Moreover, the evidence of Mr. Bee for the State and Mr. Whitten-
ton for the railroads show that the interstate movement of cotton
entails more delay in equipment than any other movement.

(i) The Court considers what he terms omissions from the
State's plan of dividing expenses. (R. p. 2630.) The first is the
Omissions. dead weight on local trains is more than on through
trains. This is true, but when the expense of the local
train is fairly divided by the traffic carried on it, whether
dead weight or wages or other expense it bears, is measured between
the interstate and intrastate. This is equally true of the other items
mentioned by the Court in this connection. They are all items relat-
ing to local trains, and had he added the 8.5 per cent which he finds
these items represent to the cost of the local train and then apportion
it over its load, we would not complain although his data is insuffi-
cient for a basis, but this is added directly to the intrastate.

(j) The Court says: "There is no charge on part of the State
that these roads are not efficiently, economically and honestly man-
aged." (R. p. 2634.) Surely the State failed to
Management of make its position clear to the Court. It put the
The Road. plaintiffs' allegations in this regard directly in issue
in the answer. It denied economy in operation;
it denied that no unreasonable salaries or wages have been paid offi-
cers and employees. (R. p. 25.) We called for explanations of the
high operating ratio of Mr. Johnson and Mr. McPherson. We put
in evidence exhibits showing cost of operation had decreased gener-
ally and efficiency and power in equipment had increased. We put
in evidence the favoritism to Pratt's hotel and Bunch elevator,
whereby the revenues were depleted \$22,000 per annum. We put in
evidence a fine for violating the criminal laws of \$10,000 and costs.
We put in evidence a salary paid to a man notoriously known in the
criminal courts as a corrupt lobbyist, and other salaries paid to men
in Missouri, part of which were distributed against Arkansas, whose
duties officially in Arkansas were unknown to officers of the company.
We put in evidence the improvident contract with the Frisco road
for the Van Buren bridge, and we put in evidence the express com-
pany contract and proof that the Missouri Pacific had received \$144,-
000 a year and unjustly withheld \$30,000 of it a year from the Iron
Mountain revenues for 20 years, and the Court so found. (R. p.
2603.) Certainly this evidence is sufficient, at least, to acquit the
State of giving the Iron Mountain a clean bill of health on its eco-
nomical and efficient management.

NO RETURN SHOULD BE ALLOWED ON NEW LINES.

The Iron Mountain recently constructed a new line, the purpose
and character of it is thus stated in the opinion:

"The main line of the Iron Mountain railroad is practically a water
level road; no mountains to cross, no rocks to blast or tunnels to

excavate, and the leading commercial cities and industries of the State are along its line. On the other hand the White River Branch of that road was the most expensive road ever constructed in the State. Miles of it had to be cut out of rock and tunnels cut through rocky mountains; there are no large cities along its line, and the country is sparsely settled owing to the heavy grades and the many curves made necessary by the topography of the country; it can not possibly carry as many cars to a train and transport freight as economically as the main line. The State officials, charged by law with the duty of assessing the property, must have taken these facts into consideration when they assessed those railroads. The White River Branch, in spite of its great cost, was in 1907 valued by that board at \$19,000 per mile and assessed on the basis of 50 per cent of its value at \$9,500, while the main line was valued at \$45,000 per mile and assessed at 50 per cent of that sum at \$22,500 per mile." (R. p. 26.)

The evidence shows it was finished in 1906, the year before the period of inquiry, and that it is chiefly used as a through line from the Northwest to the Gulf; most of the grain transstate traffic passes over it.

Should such a branch in its experimental state be considered an integral part of the system, weighing down on one side the expense account with its heavy maintenance account, and on the other the sparse intrastate revenue, and adding its assessment, even if a low one, to the property upon which the return upon the whole shall be compensatory?

We appeal to the principle decided in *San Diego Land & I. Co. v. Jasper*, 189 U. S. 439, to the effect that where a plant is built on larger lines than immediately needed, that neither the Constitution nor justice require the patrons of the other part of the plant to pay full return on the whole. In discussing the rate of return we have heretofore referred to this matter, and believe that in weighing the whole case, it should be decided that the Iron Mountain eliminate it from its property, and eliminate its revenue and expenses on this expensive new branch before it should be heard to complain of the rates as a whole.

SWEEEPING EFFECT OF FINAL DECREE.

Attention is called to the sweeping effect of the final decree and the assignment of error predicated thereupon.

Any and all rates in Standard Distance Tariff No. 3 are enjoined. Under its terms no rate therein or provision of that tariff can be enforced. If as a whole the rates therein are confiscatory, the injunction should go against a system of rates not producing more revenue than this system, but to absolutely prohibit any and all rates therein from ever being in force is, we submit, too sweeping. The clause for retention of jurisdiction is more broad than the form adopted by Judge Brewer in *Ames v. Union Pacific*, which met the

approval of this Court in *Smythe v. Ames*, and to that form it should be restrained, if by peradventure any injunction should be sustained.

THE VALUE OF THE PROPERTY.

One of the troublesome problems in rate litigation is to establish the fair value of the property, but, fortunately, by terms of the bill and express stipulation of parties, that difficulty is removed from this case.

STIPULATION OF COUNSEL AS TO VALUE OF THE PROPERTY.

"It is agreed by counsel for defendant in these cases that the assessments introduced in evidence at the hearing of applications for injunction in these cases before Judge VanDeventer, and which are set out in the exhibits filed by the accounting officials of the respective complainants in the evidence taken before the master in these cases, were made upon the basis of 50 per cent of the value of the property and that said assessments, multiplied by two, respectively, represent the value of the property for the purpose of this case. Counsel for complainants have also introduced the assessments made by the Tax Commission of the State of Arkansas of the property of each of the complainants in the year 1909; which assessments are set out in the respective statements filed as exhibits in these cases by the accounting officials of each of the complainants.

Counsel for defendant objects to the competency and admissibility of said statements, as to the assessments made in the year 1909.

But if said statements are admitted as competent, it is then agreed that they were made on the basis of 50 per cent of the value of the property; and that in order to represent the full value they should be multiplied by two.

It is further understood that the defendants are not concluded by this agreement to object to any consideration of any items included in the assessments which the defendants claim should not be included therein, which has heretofore been brought out in evidence or which may hereafter be brought out in evidence." (R. pp. 655-654.)

In *Willcox v. Consolidated Gas Co.*, 212 U. S., p. 52, the Court said:

"And we concur with the Court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates."

Therefore the evidence of the 1909 assessment and the numerous calculations based upon it in plaintiffs' exhibits will be disregarded and the valuation considered as of the period of inquiry—1907.

THE ASSIGNMENTS OF ERRORS.

We have presented the case in what has seemed to be the logical and orderly arrangement of the subjects without following the order of the assignments of errors.

The appellants have properly assigned error for each matter herein presented as error. (See Assignments of Error, R. pp. 2650-6655.)

There are some assignments of errors upon matters not herein discussed, but which are not intended to be waived. There is so much detail in the case that a separate discussion of each point would necessitate repetition, and where matters of like nature are covered in other discussion we have not repeated it in regard to some of the detail upon which error is assigned.

It is respectfully submitted that for the errors assigned that the decree should be reversed, the injunctions dissolved and the bills dismissed for want of equity.

Respectfully,

JOSEPH M. HILL,

Special Counsel.



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IN THE
Supreme Court of the United States

"THE ARKANSAS RATE CASES."

ROBERT P. ALLEN *ET AL*, RAILROAD COMMISSIONERS *Appellants*
v. No. 814.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY *Appellee*

AND

ROBERT P. ALLEN *ET AL*, RAILROAD COMMISSIONERS *Appellants*
v. No. 813.

ST. LOUIS SOUTHWESTERN RAILWAY COMPANY *Appellee*

SUPPLEMENTAL BRIEF FOR APPELLANTS.

Some matters in the brief of the learned counsel for the appellees require answer in order to make clear the facts. We will confine this brief solely to matters that we think are not sufficiently developed in the former brief, and which the brief of appellees require to be further developed, in order that the Court may arrive at the exact facts in issue. Where possible, reference will be made to pages of our former brief, where the evidence is set forth on both sides, instead of to the record, as it will likely be more convenient.

**APPORTIONMENT OF PROPERTY AND EXPENSES
BETWEEN FREIGHT AND PASSENGER TRAFFIC.**

Appellees state, at page 19, that they—the plaintiffs—in preparing their statistics, apportioned the value of the property between freight

and passenger traffic, and State and interstate traffic on the basis of gross revenue derived from each kind of traffic, and followed the same rule in division of expenses of operation between the several kinds of traffic. This is a mistake.

Plaintiffs' exhibit 3 (R. p. 2294), shows that they apportioned the property on the gross revenue, but statement 5, of that exhibit (R. p. 2310), shows that maintenance-of-way expenses (in round numbers, a million dollars), is divided between freight and passenger traffic on the train-mile basis. It also shows expenses common to repair of freight and passenger cars is likewise divided on the train-mile basis, and also shows other minor items which aggregate large sums, are likewise so apportioned. In our former brief, beginning at page 261, we discussed this subject at length, and therein show that this change of base from the revenue to train-mile on maintenance-of-way alone worked to the detriment of intrastate traffic, \$101,582.92 (our brief, p. 265), and changed the rate of return on the property from 7.04 per cent, which it would have been on the revenue basis, to 4.70 per cent on this mixed basis (our brief, p. 266). The appellees, in their brief, overlook this mixing of bases and mistakenly state that expenses between freight and passenger are divided on the revenue basis.

PREPARATION OF OCTOBER STATEMENT.

Appellees say, referring to exhibit 26, "which was prepared by the accountant of the railroad company at the request of the State." In a sense, this is correct, yet (unintentionally), it leaves the wrong impression. The Iron Mountain railroad selected this month as a fairly representative month and worked up the statistics of it which constitute exhibit 26, and put the same in evidence in this case in chief.

Mr. Johnson, its accountant, says that he did so in anticipation of a request of the State for such data. He says when the request came it was for three months' statistics, and that he resisted the application for the same before Judge Trieber, but offered the one month's statistics, which he had already prepared, which he stated at the time he regarded as fairly typical of the period of inquiry. The Judge declined to require him to furnish the three months, and this month was furnished and was later introduced in evidence by the plaintiffs, and was frequently used by the plaintiffs in the development of their case in chief, and was used by the State's accountants for the purpose for which it was offered when it came their time to offer evidence. The whole evidence on this subject is set forth in pages 305-313 of our former brief.

The impression left from the statement objected to is that this month was selected by the State, when, as a matter of fact, it was

not selected by the State, but was used by the State for the purpose for which the railroad selected and prepared it and introduced it.

NORMALITY OF OCTOBER.

At page 21, appellees say: "It was also shown that the movements of State and interstate freight on local and through trains, respectively, in that month, was abnormal." Had counsel said that there was some evidence tending to show this, we would not challenge the correctness of the statement, but when it is stated that it was shown that the movement between State and interstate on local and through freight trains in October was abnormal, we must challenge, positively, the correctness of the statement.

The October statistics were prepared by the railroads as representative of the period. Many of the plaintiffs' witnesses testified that it was representative of the period, and that the movement of interstate and intrastate traffic, and of local and through trains could be fairly tested by one month's statistics. After that evidence was in, the State used the data for the purpose for which the plaintiffs' witnesses said it could be used. Subsequently, in rebuttal, the railroads challenged the normality of October and presented some testimony along the line indicated in the above quotation, but that testimony failed to overcome the railroads' previous testimony; even if it had done so, it was overwhelmed in turn by the undisputed statistics which demonstrated that October was normal so far as train and car movements were concerned, and State and interstate traffic were concerned. The evidence on both sides of this question is found on pages 297-331 of our former brief.

It is certainly a curious and probably unprecedented situation that all the evidence on a controverted issue in the case (with the exception of the compilation of the statistics from the plaintiffs' exhibits and books—and those were undisputed), is a conflict between the plaintiffs' evidence in chief, and the plaintiffs' evidence in rebuttal.

THE LAPOVERS.

In the same connection, at page 21, the appellees attack the correctness of the results obtained in exhibit "I," owing to the lapovers from October to November. They assume that on account of these lapovers the result is unreliable, but overlook the fact that there is a great deal of testimony to the effect that the lapovers from September into October would offset the lapovers from October into November. It is indisputable fact that every period contains lapovers, whether the period is long or short. In any going business there are lapovers, but unless something is abnormal, the lapovers will equalize themselves and the period may be accepted as fairly repre-

sentative; and there is no abnormality proved here. On the contrary, normality is demonstrated to exist, and, therefore, the lapover is a negligible quantity.

INTERFERENCE WITH INTERSTATE RATES.

While differing somewhat as to the evidence touching this subject, each brief gives appropriate reference to the testimony where the evidence relied upon is found, and the Court must settle the effect of the testimony upon it, although the difference between the statement of it in the briefs is not radical. But, beginning at page 30 is an argument based on the geographical location of the cities in Arkansas, and statements as to the effect of intrastate rates upon the interstate rates in and out of these cities, and we feel that we can not pass this argument without challenging the assumptions upon which it is based.

The geographical location of the cities is correctly stated, but the evidence assumed in this argument relating to the rates in and out of these cities is not to be found in the record. The argument is evidently to bring this case within the Minnesota rate situation as found by Judge Sanborn in the Minnesota Rate Case, but the evidence as to the rates in and out of these cities, other than the Memphis situation, which is gone into in much detail, is conspicuous by its absence.

INCREASED COST OF MATERIALS, LABOR, ETC.

Beginning at page 45, it is argued that there has been no acquiescence in the rates now attacked by reason of the long length of time in which they have been in force, because it is said that the increased cost of material, labor and supplies has rendered rates which might have been reasonable ten years ago, unreasonable at the time of this attack.

This argument is bottomed on the evidence of Mr. McPherson which culminated in his graphic chart, exhibit No. 30, in which he pictorially illustrated the evidence which he gave upon this subject. The error of this argument is dual. It is admitted that there has been increased efficiency in operation within the past ten years. There has been developed greater capacity of locomotives, larger cars, reduced curves and grades, enabling more cars to be carried to the train, and more load in the cars. It is admitted that there has been some increase in the cost of labor, supplies and material. Evidence, statistical or opinion, giving one side only, has no value. It is a question, which has produced the greater effect, the increased cost, or the increased efficiency.

There is another factor that is a necessary one to determine correctly the proposition, and that is the proportionate increase or de-

crease of revenue compared with increased cost and efficiency. Mr. McPherson admits that engines have a greater potentiality of 25 or 26 per cent, and that there is an increase of capacity in freight cars of 20 per cent (appellees' brief, p. 50). At other places, he tells of millions of dollars spent on the improvement of the line in Arkansas in the last ten years, which would necessarily give increased efficiency to operation.

The graphic chart shows decreased revenue, which was explained by Mr. McPherson to refer only to freight revenue, and not to passenger or miscellaneous (R. p. 382). It was shown in Mr. McPherson's cross examination (R. pp. 381, 382), that this necessarily referred to a decrease in interstate revenue. The appellees now say (brief, p. 57), that it is a mistake to assume that the decreased revenue referred to interstate revenue in Arkansas as the line on the chart showing this decreased revenue was for the whole Iron Mountain system, which embraced some five or six States. If this be true, the chart is of less value than we had supposed when we cross examined Mr. McPherson upon it, because it will not do to compare the increased cost of material and labor pertaining to all classes of service in Arkansas with the decreased freight revenue of the entire system consisting of five or six States. It is a comparison of the increased cost so far as it affects one-fifth of the whole with the revenue of the whole.

Mr. McPherson failed to give the other side of the equation, but the State gave it. The State put in exhibit "Z" (R. p. 2569), which contains all of the elements necessary to a comparison of increased cost of material and labor with the increased efficiency and also with change in revenue for the period selected by Mr. McPherson, *i. e.*, 1897 to 1907. It shows that the improved efficiency taken into consideration with the revenue more than offsets the increased cost of material, supplies and labor and shows the *net* increase of revenue per mile on one of the plaintiffs' roads to be increased 69 per cent, and on the other one 163 per cent.

Exhibit "F-1" and "Z" (R. p. 2571), shows year by year from 1897 to 1907, in the entire United States railroad statistics of increased efficiency, and also in Group 8; and of these two roads for 1897 and 1907. The average train load in the United States, in tons, increased from 204 to 357, 75 per cent; on the Iron Mountain, 75.6 per cent; on Southwestern, 83.7 per cent. Receipts per ton-mile decreased in the United States 4.9 per cent; in Group 8, 10.5 per cent; on the Iron Mountain 10.4 per cent; on the Southwestern, .7 per cent.

The load increased 75 per cent in tons, and revenue per ton-mile decreased only 10 per cent, and the freight train mileage increased 36 per cent, and the ton mileage increased 139 per cent. The passenger side also shows similar increased efficiency. In the United States, the passengers per mile increased 37.8 per cent; on the Iron

Mountain, 49.41 per cent, on the Southwestern 57.7 per cent, and the revenue increased on the Iron Mountain, 1.9 per cent; on the Southwestern, .8 per cent, while in Group 8, it decreased 1 per cent, and in the United States decreased .4 per cent. These statistics demonstrate slight decrease in freight revenue per ton-mile, and slight increase per passenger mile, and tremendous gains in efficiency of operation and necessarily tremendous savings, if economically administered, of expenses of operation, notwithstanding increased cost of labor and material. They utterly destroy the one-sided picture presented in the McPherson chart. But it is said these statistics are of no value because they begin with 1897, the worst year for railroads in their recent history, and compare it with 1907, the best year. That is exactly what the graphic chart does, and these exhibits but supplement the one side of the story told in it for the same period. It was the period for comparison selected by Mr. McPherson. He begins with 1897 when everything was at low ebb, and shows the increase in price of material, labor and supplies from then till 1907. The State begins with 1897, and shows the increase in efficiency, the greater loading per train, the greater train for the engine, the greater number of tons and passengers for the train, the greater mileage for the train, and the ultimate end, the *increased net revenue per train-mile*.

Chart 30 is a bald attempt to show one phase of a subject when there are offsetting elements known to exist, and the offsetting elements are omitted. When they are supplied, it is found that the net result is in favor of the railroads, and, therefore, if the rates were remunerative in 1900 when established, they were more so in 1907, the period of inquiry, and having acquiesced in them for over eight years before attacked, acquiescence should be presumed.

It is said the reduction in passenger fares are not shown in the tables of the State; part of it is, as the two-cent passenger act went into effect in the spring of 1907. Mr. McPherson's chart, however, does not deal with the passenger revenue or miscellaneous revenues, and he so admitted. (R. p. 382.) As the passenger revenue is only 26 per cent of the revenue, and the reduction from three cents to two cents per mile is 50 per cent nominally, yet, actually it was admitted to be only 35 per cent, excursion and other reduced fares not prevailing under the two-cent rate, bringing the reduction to 35 per cent actually; the intrastate passenger is 59 per cent of the passenger traffic (see table, our brief, p. 265); therefore, the two-cent fare reduced by 35 per cent, 59 per cent of 26 per cent of the revenue, or a reduction of 5.25 per cent of the whole, and this not taking into account the increased passenger traffic naturally flowing from the reduction of rates.

It follows that the legislative reduction of 5 per cent of the revenue when the increased efficiency far more than counterbalanced

such reduction, left the earning capacity of the road much greater than when the rates were established in 1900.

DIVIDENDS.

Exhibit 47 (R. p. 2431), shows the Iron Mountain declared dividends from 1904 to 1907 inclusive, of 10 per cent, and for the fiscal year ending June 30, 1908, 5 per cent. It is said (appellees' brief, p. 61), that the latter embraced our period of inquiry. That is true, but the panic began in October, and was seriously felt from November on to and including June 30, the date that this statement was made out. Mr. McPherson thus described the period when it was most felt: "From April to June, it reached the highwater mark of effect." (Our brief, pp. 309, 310.)

It is fair to assume that but for the blighting effect of the panic in the first part of 1908, the six months after our period of inquiry, that the 10 per cent dividend of previous years would have been maintained for the fiscal year ending June 30, 1908, for the 5 per cent was evidently made prior to January 1, 1908.

On page 61, of appellee's brief, this is said: "It also represents all revenue that accrues from investment. The Iron Mountain railway owns a large part of the bonded indebtedness of other railroads, among them, the Texas & Pacific Railroad, and the earnings of the latter contribute to the dividends of the former." In view of the fact that there are seven thousand pages of typewritten evidence in this case, we hesitate to make the broad statement that there is no evidence in this voluminous record upon any given point, but notwithstanding that hesitation we feel called upon to deny absolutely the correctness of the quoted statement.

So far as we are able to discover, and we speak after careful investigation, there is no evidence whatever in this record that the Iron Mountain owns a large part or any part of the bonded indebtedness of any other road; no evidence that it owns the bonded indebtedness of the Texas & Pacific railroad, and no evidence that the earnings of the latter road contributed to the dividends of the Iron Mountain.

We will not combat for a moment the argument made at page 62, that, notwithstanding the railroad may be making money from other sources, that it is entitled to a reasonable return on the property devoted to intrastate traffic aside from the return it may make on the property devoted to interstate traffic. This was settled in *Smythe v. Ames*. The fact that the road is paying a large dividend is evidence to be considered in determining whether the plaintiffs have proved that they are losing on their intrastate business.

It has heretofore been shown that the Iron Mountain in Arkansas is costing less to earn a dollar of revenue than the Iron Mountain as a whole is costing, and this is true even after spending magnificent

sums in improving the road and buying equipment in Arkansas, and it is also shown that the revenue per ton-mile and per passenger mile is practically the same in Arkansas as on the system, and also shown that the net revenue per mile on the road is much greater in Arkansas than on the system; it is also shown that the freight intrastate revenue is double that of the freight interstate revenue, and the passenger intrastate revenue appreciably larger than the passenger interstate revenue (brief, pp. 56-59), and also shown by plaintiffs' exhibits that the return on all property in Arkansas is compensatory.

Therefore, the plaintiff must prove an intrastate expense so great as to wipe out the greater intrastate revenue and in addition thereto show that its intrastate expenses are so great that after wiping out this excess in intrastate revenue, they bring down the general level to a return below a compensatory one. If the road, as a whole, was a losing venture, or if the expenses in Arkansas were greater than on the system, or if the return on all business in Arkansas was confiscatory, this might not be difficult, but, in view of these proved facts, it is a pretty large order to fill to prove one part of the business is losing so enormously.

At page 63, of appellee's brief, the falling off in dividends in 1908 is ascribed to the facts of increased cost of material and labor given in Mr. McPherson's testimony, and depicted in the chart. In view of the testimony of Mr. McPherson and other officials of the blighting effect of the panic, especially in the first part of 1908, it seems a far cry to ascribe the falling-off in dividends to any other cause than this one; especially, as the statistics in exhibits "Z" and "F-1" prove the enhanced expenses have been overcome by the enhanced efficiency.

EFFECT OF THE PANIC.

At page 70, it is said that the panic was not felt in time to affect the business in the last part of 1907, and reference is made to the testimony of Mr. Kimball, at page 160 of the record, to bear out this statement. This occurs in Mr. Kimball's testimony, at that page:

"Q. You did not begin to feel it until about November, you think?"

A. I think not.

Q. You did begin to feel it then very severely, and from that time up until the close of this year, 1908, your road was suffering from depression in business, probably, as it never suffered before.

A. Yes. I might add, it affected both classes of business (referring to State and interstate), correspondingly, I should say."

Mr. McPherson says the operating department felt it in December. Mr. Johnson says it began in October, but its effect on the earnings began to be felt in November. (Our brief, p. 310.) Mr. Nay says the panic began in the latter part of October, and the "slump showed up in November" (p. 2075.) The testimony of these auditors.

Nay, Kimball and Johnson, who deal with revenue, conclusively show that the panic was severely felt in November and December—one-third of this six months' period by which these rates are to be tested. At page 68, the statement is made that the State's accountants adopted the last half of 1907 in making up their statements and applied their theory of dividing expenses to it. The State's accountants adopted no period; they merely took the accounts presented by the plaintiffs, and applied their theory of allocating expenses to them. After the plaintiffs presented October as a representative month of the six months' period, and stated that the movement of State and interstate, and local and through trains, could be fairly tested by it, they adopted it as representative of that period. The State has always combatted the fairness of testing these rates on that period. The Southwestern road, in addition to putting in this period, also put in the statistics for the year ending June 30, 1908, but that worsened rather than bettered the situation, as no one will contend for a moment that the rates could be tested on the first half of 1908. The Iron Mountain put in both halves of 1907, but the detail was only put in in regard to the last half and this is shown in exhibit 3 and exhibit 3-A. In fact the case was tried on the statistics of the last half of 1907. It is interesting to note that the rate of return shown by the Iron Mountain on the last half of 1907, according to its own method of computation on the revenue basis mixed with the train-mile basis, shows a return on all the business in Arkansas of 7.50 per cent (R. p. 2818), while the first half of 1907 shows a return of 9.97 per cent. (Ex. 8, R. p. 2334; 8-A, R. p. 2341.)

IMPROPER CHARGES.

Each brief has developed their side of these controverted items. Our side of it is presented at pages 281-294, and attention will be called only to a few of the matters again. At page 70, of appellees' brief, it is seen that they miss the force of our objection to charging the State with 77 per cent of the expense for repairs to tools. Our contention in regard to this is set forth at page 294 of our former brief.

Regarding the Memphis expense being charged to Arkansas, it is said, at page 77, that if they were not charged to Arkansas, they could not be charged to any account as the road terminates at Memphis. We fail to see the connection between the two propositions. It is stated by appellees that there are many division points near the State lines that serve two States. It is true, and also true that the expenses of the division points are all charged to the States in which they are situated, and that is what we contend should be done in regard to the Memphis expenses. Instead of so doing, 13 per cent of the freight expenses are charged to Arkansas intrastate, and 59 per cent of the passenger expenses are charged to the Arkansas in-

trastate passenger when not a pound of the freight and not a single passenger in or out of Memphis was intrastate, but all interstate; and all the revenue is interstate and so carried in the exhibits in this case.

On the other hand, there are terminal expenses at Fort Smith, whether big or little is not the question. They are recognized to be terminal expenses, and yet no part of them was charged to Oklahoma, although Fort Smith is serving Oklahoma just as Memphis is serving Arkansas. It will not do to say that Fort Smith is a way station and the principle does not apply, for, in the testimony of Mr. Johnson, quoted in our former brief at pages 286-288, he recognizes terminal expenses in Fort Smith, not station expenses only, exactly like terminal expenses in Kansas City where the same question was raised as to charging all the Kansas City terminals to Missouri, in the Missouri rate litigation.

It is not a square deal to charge Arkansas with the Memphis expenses, and also with the Fort Smith expenses. As a matter of fact, Arkansas should bear the Fort Smith expenses, and it would be equalized by terminal expenses in other States being used to serve Arkansas. But there is no warrant for charging the terminal expenses, and all other expenses of part of a road in another State to any part of the Arkansas intrastate.

At page 81, the appellees fall into the same error in regard to the ownership of the Bunch elevator, which the trial court fell into; which has been pointed out in our former brief at page 289.

We assume from the silence of the appellees on the subject, that they do not further question the correctness of charging the Express Company dividends, and the Pratt Hotel rental to the railroad revenue, although they were omitted in their account upon which they base their case.

THE REVENUE BASIS.

We can not discuss either the authorities or the evidence on this subject without repetition, and merely call attention to the argument made at page 86, of appellees' brief, to the effect that the interstate rates, save in exceptional instances, do not exceed the combination of the local rates, and this is the condition generally prevailing. We think the evidence fails to prove it; but assume for the argument's sake, that this statement is correct; the rate varies with the length of the haul—the longer the haul the less proportionally the rate. In other words, the rate for 100 miles is not double the rate for 50 miles. Hence, in normal and proper rate-making, the rates for the longer haul should be less than the combination of intervening rates for shorter hauls. Sometimes, as is the instance in this record of the sugar rate, a combination of local rates will prevent an unreasonable rate obtaining; but, in proper rate-making, the combination of the locals would not produce the rate for the longer haul, but

the rate for the longer haul would be made on its own basis, irrespective of the intervening rates, which sometimes have a chastening effect, but should, in proper rate-making, never have a basic effect.

ZONE RATES.

Beginning at page 94 is a defense of the zone and blanket rates. This would be quite forcible if presented to the Interstate Commerce Commission in defense of their existence, but is wholly beside the inquiry here, which is simply: "Does the revenue produced by them so measure the cost of the traffic moved under them that it may be used as a factor with which to divide the common mass of expenses between such traffic and other traffic moving under graduated distance rates." At page 94 it is said that the same conditions prevail in the Commission tariff that were shown to prevail in the interstate tariffs in this respect. This is a mistake. There is only one zone rate made by the Railroad Commission, and that is on coal. There is a zone rate on coal from the coal field of Western Arkansas, an area of 50 miles in extent, into Little Rock, and the movements out of Little Rock are on the graduated distance tariff. Whether wisely or unwisely, coal is always moved on zone rates, the zone embracing the particular mining territory where it originates. This particular zone rate is different from the others in that it is only effective to the distributing point, and out of it, the graduated distance rates apply. If, however, many zone rates were proved to be in the Commission tariff, it would only prove that the intrastate revenue was as unreliable yardstick to measure costs as the interstate revenue.

At page 109, this subject is again referred to, and it is sought to prove that there are other zone rates existing in the Commission tariff. Sugar is mentioned as one, but that is not a zone rate. It is merely a maximum fixed for all hauls of it over 200 miles. There might be, and doubtless are, some movements under this that would have practically the effect as a zone or flat rate, in disregarding distance for a given length of haul, but they would be few and rare, as the average intrastate haul is 72 miles, and the maximum only applies to hauls over 200 miles. The zone rate is where *all* of the given commodity moves under the same rate from a given territory. This maximum merely indicates that occasionally some movements would occur over 200 miles, where for the last miles of it, the distance would not be regarded in the rate. There are probably some other such maximums in the Commission tariff, but in view of 72 miles being the average State haul, they do not affect the general proposition that there are no zone rates in the Commission tariff save the coal zone rate heretofore referred to.

The rough material rate on lumber is not a zone rate, but a graduated rate where the graduation is longer than in merchandise and other class or rates. The graduations in those is usually every five or

ten miles. In lumber, the graduation is 25 and 50 miles distances, while the interstate lumber zone is 600 miles in diameter. No parity can be found there. Then it is argued, at page 102, that the State rates produce different revenue for the same length of haul where the haul is over two or more lines. This is recognized in all rate-making as proper. It cost more to move freight over two lines than over one for the same distance, and the rates are made correspondingly in all properly constructed tariffs, where commercial and competitive conditions are not controlling, and they are not effective in the Commission tariff, which is bottomed on the distance system, whereas, the interstate rates are bottomed principally on the commercial and competitive conditions. The more inequalities, however, that may be found in the Commission tariff, the worse the revenue produced from it is proved to be as a measure with which to divide the expenses incurred in hauling the whole traffic.

THE RELATION OF RATES.

At page 103, it is said that the plaintiffs' testimony as to relation of rates does not conflict with the graphic charts put in evidence by Mr. Hamilton. Counsel seek to reconcile their testimony with the actual conditions found by Mr. Hamilton, on the ground that there can be no comparison between short-haul State rates and long-haul interstate rates. If that be true, the whole revenue theory is thereby destroyed. The average State haul is 72 miles, and the average interstate 222. A segment of the revenue from the whole interstate revenue, represented by the haul in Arkansas, is taken with which to measure the cost of the traffic, while the cost incurred in the intrastate or short-haul traffic is measured by the revenue produced from the intrastate rates, which, it is now said, can not be compared with the other. This explanation, however, does not explain the nonrelation of the interstate and State rates as found in the tariffs brought into the testimony by Mr. Hamilton from the tariffs themselves, and many of them are illustrated in the charts. Numerous charts are filed; two only of them are published in our brief to illustrate to the eye the effect of the great mass of testimony on this subject. Turning to the first chart (p. 206, of our brief), which is the simplest of all of them, it is seen the interstate rates run level in each instance, while the State rates are seen to be more or less regular in graduation.

The revenue produced from these rates represents the actual dollars and cents in the statistics in this case of the two classes of traffic over the given section of the road.

The next chart shows even greater nonrelation. For instance, take the third and fourth classes, where the interstate are graduated to some extent, but the graduations are so out of relation to the other graduation that it destroys all chance for parity. The various charts

in the record depict 39 per cent of the Iron Mountain system, and practically all the large movements of traffic carried by the road. It was impracticable and unnecessary to print all these charts. The testimony fully explains the facts, and they are merely to illustrate the facts proved in the record to the eye.

At page 213 of appellee's brief is inserted the table of Mr. Roth, which was introduced for the purpose of proving the relation of rates. We have (at page 179 of our brief), discussed this table and believe have shown it is unreliable and inapplicable; but, accepting it for the argument, what does it prove? Mr. Roth says: "The object of this comparison is to demonstrate that the revenue derived from the handling and hauling of all classes of freight traffic bears a very much closer relationship to the cost of handling these commodities than does the tons one mile." (R. p. 1977.) He says these percentage figures show that the construction of rates generally, State or interstate, is based on the cost of doing business, etc. (R. p. 1980.) Yet there is no cost shown in the table, and this is a mere assumption of Mr. Roth, based upon his grouping of the revenue opposite the ton-miles. All the witnesses agree that there are no cost data for specific commodities. There is no pretense that there is any cost in this table. Mr. Roth gives his opinion as to the relation of cost to revenue as compared with its relation to ton-miles. An examination of the table shows the revenue on the different classes received on the Missouri Pacific system, and that received in the intrastate traffic in Arkansas, are so variant and out of proportion to each other that it is impossible to use the two classes of revenue as a measure of the cost of the traffic and expect to get a result bearing any relation to the subject.

THE STATE'S BASIS OF DIVIDING EXPENSES.

It is said, at page 158, that the State accepted as correct the railroads' apportionment of expenses to Arkansas, etc., with certain exceptions therein mentioned.

The State never accepted any apportionment of expenses to Arkansas; it merely used the railroad figures to demonstrate a sounder method for apportioning a given amount of expenses to two classes of traffic. This is explained at pages 261-281, of our former brief.

It is argued at length, at page 121, that, owing to the way the books are kept, that some business in October would be missed in exhibit 26, owing to the lapses in the October, and which would not appear on the books, while the wheel reports would show the actual movements during the month.

This argument overlooks entirely the fact that the same conditions existed in September, and that there would be a corresponding lapse from September into October as from October into November. All the witnesses who discussed the subject on either side of

the case, stated, in more or less emphatic language, that State and interstate traffic moved uniformly. Hence, there is no reason why the lapovers from one month would not equalize the lapovers in another month.

The lapovers do not apply to the car-mile or train-miles; they only apply to the tons and ton-miles. Exhibit 56, filed by the plaintiffs in rebuttal, has in it all the vices of the lapovers which the State's exhibit contained, and also some of its own. (R. p. 2234.)

It is to be noted that the lapovers occur in exhibit 26, the work of the railroads themselves, and not in exhibit "I," which is compiled from it by the State. This is shown in the testimony of Mr. Gray (R. p. 1923.) Attention is called to the testimony of Mr. Roth, when he introduced into evidence exhibit 26, which is set forth fully in our brief at page 305. He was questioned closely by the State as to the accuracy of this exhibit, and whether it was compiled by a competent force; whether the statistics therein could be relied upon, and he assured the Court that it was correctly done by a competent force, and was absolutely accurate, save possibly for clerical errors, and he had taken every precaution to avoid them. (Brief, p. 305.)

The lapovers occur in the revenue of the test period of inquiry as found in the plaintiffs' own exhibits, probably somewhat diluted by being of a longer period than one month, but being a much larger proposition, would be as serious an impairment of their accuracy (if it be an impairment), as those of the tons for a month's period. This was shown in Mr. Gray's testimony. (R. pp. 1923, 1924.) But, as a matter of fact, the lapovers do not impair the accuracy of these statements. They will occur in all going concerns, and, if the period is normal, the lapovers from one end will equal the lapovers from the other; and when the normality of the period is proved, then necessarily is proved that the lapovers are negligible, and the whole railroad case is dependent on the six months being normal.

Beginning at page 125 is a criticism of Mr. Wharton for originating the plan of dividing expenses because he was not an experienced railroad man, and quite an argument is made discrediting his work on account of his lack of experience in railroad affairs. Mr. Wharton is an accountant. He studied the testimony of the operating officials given in the Missouri Rate Case, and got all information possible from experienced railroad men, and then applied his accounting skill to the problem before him. If the scheme is a good one, it matters not where it originated. Judge Trieber said it was "the best method of solving these problems that has been called to the attention of the Court." (R. p. 2621.) It was supported in its main lines by Mr. Doddridge, chief witness for the plaintiffs, and by Mr. Rawn, president of the "Monon Route," also a witness for the plaintiffs. It was also supported by many railroad accountants, men of vast experience in the problems to be worked out; it was

supported on the different questions, where it was attacked by men thoroughly familiar with the particular question in controversy. On the mechanical questions, it was supported by master mechanics and roadmasters; on engineering questions, by civil engineers and standard treatises; on switching and train movements, by yardmasters and switchmen, brakemen and conductors. It can not be brushed aside because not planned by a railroad man.

It was planned by an expert accountant, applying his knowledge of accountancy to the facts developed by men familiar with the subject. An accountant would not have to be a wagonmaker in order to devise a cost system for a wagon factory; he would not have to be a merchant in order to devise a cost system for a department store; but he would have to have a knowledge of the principles of cost accountancy and information as to the particular business to which it was to be applied; and that was the principle upon which the State's plan was worked out.

It was opposed and criticised particularly by Mr. Gray, Mr. Ward and Mr. Nay, reinforced in some places by employees and officers of the plaintiffs' roads. Their views were in turn opposed and criticised on mechanical and operating subjects by men far more familiar with these subjects than these officials could possibly be, as they were men on the ground and whose everyday work was in the line upon which their testimony was given.

At pages 134, 135, it is argued that the Iron Mountain test should be disregarded because contrary to the views of operating men as to the proportion of interstate and State freight on local and through trains. The Southwestern test month is appealed to also as a refutation of it, and in this connection the Southwestern test month is referred to as a normal month. It will be noted in passing that the trial court disregarded the Southwestern test month as well as the Iron Mountain test month in regard to the proportion of State and interstate freight on the local and through trains and substituted what we respectfully term arbitrary proportions in lieu thereof. The Southwestern test month was submitted to Mr. Sewell, one of plaintiffs' expert witnesses and vice president of one of the Northern Pacific railroads, and he said that in view of the facts therein shown, that his testimony as to the proportion usually carried on local and through of State and interstate traffic would not apply. (Our brief, p. 232.) The undisputed facts in regard to the Arkansas traffic we also submitted to Mr. Rawn, another of their operating experts, and he said his views would not apply to such a situation (p. 230). Mr. Doddridge and Mr. Lincoln, each familiar with the Iron Mountain, said that the local freight train carried more interstate than intrastate traffic. (B. p. 285.) Hence, the result of the analysis of these test months should not have been such a surprise and shock to the plaintiffs.

As a matter of fact, the difference in the essential element between the Southwestern test and the Iron Mountain test is not radical, and one corroborates the other. The Iron Mountain test (exhibit "I," page 2517), shows the local train is made up of 71.49 per cent interstate, and 28.51 per cent intrastate, but this 71.49 per cent interstate is only 8.70 per cent of the total interstate, the balances being carried on the through train. The Southwestern test, exhibit "P," (p. 2541), made up from exhibits 19 and 20, filed by the road itself, shows 7.69 per cent of the total interstate was carried on the local (as against 8.70 of the Iron Mountain), and this 7.69 per cent is 67.34 per cent of the total load of the local as against 71.49 per cent of the Iron Mountain. The only material difference is the amount of intrastate on the through trains. On the Southwestern, only 21.48 per cent of the intrastate is on the through (exhibit "P," p. 2541), while on the Iron Mountain, 60.90 of the intrastate is on the through (exhibit "I," p 2516).

Whittenton's test month on the Rock Island showed 18 per cent of the load of the local was intrastate, and 82 per cent interstate. The 18 per cent represented 60 per cent of the total intrastate freight, and 40 per cent of the intrastate was on the through. (Our brief, p. 312.)

To summarize: On the Southwestern, 67.34 of the load of the local is interstate, on the Rock Island 82 per cent, and on the Iron Mountain 71.49. Surely, the Iron Mountain figures are not so out of line with the undisputed statistics of the other two roads, compiled by their own offices, as to cause the Iron Mountain statistics to be discredited. When you examine the maps of the Iron Mountain system which are in evidence in connection with much testimony upon the point, the reason for larger intrastate traffic on the through train is plain.

Little Rock is the great distributing point for the State of Arkansas. The lines of the Iron Mountain radiate out of Little Rock as the spokes from the hub of the wheel. The division points average 98 miles apart. Some are much shorter. Little Rock to Pine Bluff is 42 miles; all the intrastate traffic going out of Little Rock to division points and beyond them properly go on through trains, and the local trains would carry all the intermediate traffic whether State or intrastate. There is striking similarity in the three tests before you of the load of the local and the fact that the actual figures show more intrastate on the through train than the officials of other railroads expected to find there is not an argument against its correctness, but merely against their knowledge of local conditions.

The greatest clash between opinion and facts, however, was over the load of the local. These faraway experts regarded the interstate on it as negligible, and its load almost entirely intrastate and

largely L. C. L. intrastate. The tests of the three roads show the contrary, and the interstate from 68 to 82 per cent of the load of the local.

The evidence shows that months were spent checking over exhibit "I," and out of over 20,000 cars, errors in only 23 discovered.

If the Cannon-Moore-Brown theory be correct, that an undue amount of interstate traffic was loaded on the local train during October, how can they account for this large amount of intrastate traffic being on the through train in October? The through trains are always, in proper railroad operation, loaded to the full capacity of the locomotive. There is supposed to be no waste on them. It is incomprehensible that interstate traffic would be taken from the through train and put on the local, and intrastate traffic taken off the local and put on the through. But some such shifting of traffic would have to have taken place to give any credence to the Cannon-Moore-Brown theory in face of 60 per cent of the intrastate traffic being carried on the through trains.

RENAISSANCE OF THE CANNON-MOORE-BROWN THEORY.

As anticipated in our former brief, the appellees relied upon the Cannon-Moore-Brown theory to establish the abnormality of train loading in October. We discussed at length this testimony at pages 319-323 of our brief. The inherent weakness of this theory is shown in their own statements. The statistics set forth at page 323, which were undisputed, demonstrate that the train-miles and the car-miles for October were an exact one-sixth of the six months' period of inquiry, and also demonstrated that the State and interstate traffic moved normally in October, in relation to each other, compared to their respective movements for the six months' period, and hence the overloading of the local with interstate traffic was an impossibility.

The Roth's statistics presented by the appellees in this connection were discussed while considering lapovers. (See p. 323 of our former brief.)

We, again, at the expense of repetition, call the attention of the Court to that fact that the trial court, in disregarding the statistics in the case, and giving credence to the Cannon-Moore-Brown theory, swept away the Southwestern test as well as the Iron Mountain test, and substituted 40 and 60 percentage respectively for the interstate and intrastate load of the local trains.

If we try this case on either the Southwestern test or the Rock Island test, it is as conclusive against the plaintiffs as the Iron Mountain test itself, and there is not a scintilla of testimony—not even from Cannon, Brown or Moore—attacking either the normality of the months in which these tests were made, or the accuracy of the results shown by them; they are plaintiffs' evidence and work, not the State's.

MAINTENANCE-OF-WAY.

In the conclusion of the argument against the State's plan of dividing maintenance-of-way expense, at page 168, counsel made this point: That the transstate freight should not participate equally with other freight in the expense of repairs to building and stations, in the maintenance-of-way expenses. Exhibit 3, statement 4, (R. p. 2303), shows this item: "13. Buildings and grounds, \$38,425.50" out of a total expense of \$965,445.89, or about 4 per cent of the total. The transstate business used the buildings and grounds, and should participate in these expenses. The statistical evidence showed that the transstate cars are in the State four or five days over their schedule. Telegraph operators, station agents, switchmen, weighmen and other employees using the stations and grounds, are employed in and about the transstate cars while they are thus loitering overtime from division to another; and even when passed through as "on a bridge," some station, telegraph and other house service is rendered this traffic.

On the other hand, the interstate has certain facilities peculiar to itself in which the intrastate does participate: The Paragould trackage, the cattle chutes and pens, cotton platforms, etc.

Next, it is said the transstate makes no use of the switching for which 50 per cent is charged to the local train car mileage. The effect of so charging the local train is to relieve to that extent the through trains, and correspondingly the strict interstate and the transstate of that much expense represented by the added 50 per cent of local car mileage. Certainly, the plaintiff should not complain of this, but many of the State witnesses did complain of it as being an injustice to the State on the ground that much of the switching done by the local train was done in order to permit the through train to have the right-of-way.

STOPPING OF LOCAL AND THROUGH TRAINS.

Counsel claim, at pages 179 and 180, that we are in error as to the finding of the Court that the through train stops every 35 miles, and the local train every five miles. We have heretofore quoted the Court exactly. There is no warrant for this finding in the evidence of the conductors and brakemen, as thought by the learned counsel, and an examination of their testimony will so prove; in fact, their testimony tended to reduce the stopping of through trains to less than every 20 miles, which estimate had been made by Mr. Maurice Wright, and accepted by the State in its exhibits. This is just one of those errors which are often made by the most careful men; but that it is an error is patent as is seen by the testimony set forth at page 375 of our former brief.

WAY STATION SWITCHING.

At pages 182-185, counsel claim that the way station switching is not provided for in the State's exhibits. They quote the critics-general, Messrs. Gray, Ward and Nay, at length on this point. Mr. Ludlam explained that this had been done, and it was merely an oversight of these gentlemen in saying that it had not been done. It is contended by counsel that these critics-general know more of the subject than Mr. Ludlam, "a mere accountant." We readily concede that they may be better authority on way station switching, but do not concede that they are better authority on what is contained in the State's exhibit than Mr. Ludlam. There is no dispute that this way station switching should be allowed; Messrs. Gray, Ward and Nay made that quite clear. It was made clear to the accountants for the State before they prepared their exhibit, and they provided for it fully. In the hasty examination which these critics-general necessarily made of a rather complicated formula, they merely misunderstand the allowances made. It may be true that the exhibit did not make it as clear as it should have done. There is really no dispute over the fact of the justice of this allowance. The dispute is as to whether the State has accounted for it in its division of expenses.

At pages 375-379 we have quoted Mr. Ludlam's testimony in full, wherein he shows that this is fully accounted for. We have no doubt that if the critics-general had had the benefit of this explanation before they made this criticism, that the criticism would not have been made.

STATION EXPENSES.

At pages 188 and 189, counsel quote from Messrs. McPherson and Ward on the injustice of the ton-mile to measure station expenses. The State accepted as correct the objections to the ton-mile to measure station expenses on information received before they prepared the exhibits, and did not use the ton-mile as the measure of station expenses, but used the ton. Mr. Ward illustrates the injustice of using the ton-miles to apportion station expenses, with two similar shipments of merchandise, one from Chicago, and one from Little Rock, to Benton, Arkansas. He says that station expense is exactly the same on each, but the application of the ton-mile, one being 25 miles and the other 600 miles, would disproportionately burden one of the shipments with an expense over the other with 24 times for identically the same service. (The quotation in appellee's brief is not full, but is substantially correct. See R. p. 1864.) The State fell into no such error as using the ton-mile for station expense, but the trial court did fall into this error and rejected the State's ton-basis and accepted the ton-mile basis, multiplying the ton-miles by six on account of the interstate haul being six times longer than the State haul. (R. p. 2628.)

Under the head of "Extra Cost of Intrastate Traffic," we have discussed at length the error of using the ton-mile for measuring the station expenses. (See pages 225-227, subdivision 6, of our brief.)

YARD AND TERMINAL EXPENSES.

The evidence on this subject was discussed in our brief under the head of "Bridge Theory of Transstate State Traffic."

In order to meet this bridge theory, the State went exhaustively into the manner of handling cars in yards and terminals. The evidence is summarized in our brief at pages 238-256. The results of these actual conditions in yards and terminals, as disclosed by the exhaustive examination of them, were made the basis of this division of expenses. It is also explained as compiled in the exhibits at pages 383-387 of our brief. The appellees quote at length the evidence directed against it at pages 190-198 of their brief. The State's theory is founded on the actual facts as found in the yard records and in the train movements, and all theoretical opinions on the subject must give way to the actual facts as they exist.

OTHER TRAIN EXPENSES.

Counsel, at page 201, say that this item, which includes wrecks, injuries to persons on track, and to stock and various other causes, could have been allocated to local and through trains and criticise the State's using the train-mile basis for this item.

It is pertinent to inquire why the plaintiffs did not allocate this item if it was capable of being allocated. In fact, much of it is insusceptible of allocation to a definite train; for instance, a fire starts in the night time, or stock is killed in the night time, and probably a dozen trains pass, and it is impossible to tell which one of them caused the loss. It seemed to the State's accountants that this was a train expense, and the train mileage should measure it.

TON-MILE DIVISION OF TRAIN COST.

The appellees, beginning at page 208, criticise rather severely the State's witnesses on account of their lack of railroad experience, when dealing with the evidence sustaining the ton-mile basis for dividing train costs.

Counsel overlooked the fact that this division of expense is largely founded on the testimony of W. B. Doddridge, former general manager of both of these roads, and an expert witness for the plaintiff, and adviser of counsel and witnesses in both the Missouri case and in this case. They can not question either his experience, his ability as an operating man, or his knowledge of the subject, as they feel justified in criticising the State's witnesses along these lines. It is also sustained by Mr. Rawn, president of the Monon Route, another

of their experienced operating experts. Their testimony is abstracted at pages 334-338 of our brief. Mr. McPherson's analysis of the various units of measurement also gives warrant for this use of it. He says: "The ton-mile basis makes no provision for terminal expense, because there are no ton-miles at terminals that represent the expense. It only attaches as a unit of measurement between two given points, the beginning and the end of the journey, but does not consider the expense at either end. It can not measure the expense at either end." (R. p. 315.) It was used by the State only as a unit of measurement between the beginning and the end of the journey. The train cost is incurred between these points, and its justice, fairness and common use for this purpose is so thoroughly established by such an overwhelming mass of testimony on each side of the case that we do not consider it open for argument.

EFFECT OF THE COURT'S FINDINGS OF FACT.

Counsel for the appellee, at page 254, say that the lower court considered conflicting evidence and made its findings and decree thereon, and that all presumptions are in favor of the correctness of the findings, and they will not be disturbed unless clearly in conflict with the weight of the evidence.

There were no findings of fact in this case in the sense that that term is used in the decisions. We called attention to this at page 393 of our former brief, but, even if there were findings of fact, the rule would not obtain in this class of cases. This was pointed out clearly by Mr. Justice Moody, speaking for this Court in *Knoxville v. Knoxville Water Company*, 212 United States, page 1. The Court will not fetter its own independent judgment in cases where State statutes are sought to be invalidated by facts, but will weigh the facts according to its own scales, and not by the scales adopted by a master or the trial court.

The authorities cited by counsel to sustain their statement do not sustain it. *Kimberly v. Arms*, 129 United States 512, the first case cited, is a decision on the effect of the finding of the master in the trial court, and not upon the effect of the finding of a court in chancery on appeal to this Court; much less is it an authority on the effect of the trial judge's opinion in a case attacking a State statute as invalid on account of an alleged confiscatory effect of the same as developed in the evidence. *Idaho Mining & Milling Company v. Davis*, 123 Federal 396, is a decision of the circuit court of appeals of the Ninth Circuit, to the effect that the findings of the trial court in equity will not be reversed unless clearly erroneous or against the preponderance of the evidence. *McKinley v. Williams*, 74 Federal 94, is a decision of the Circuit Court of Appeals of the Eighth Circuit to the effect that where the court below has considered conflicting evidence, and made a finding and a decree thereon, the finding will be taken as presump-

tively correct, if the appellate court is in doubt as to the facts found. *Snider v. Dobson*, 74 Federal 757, is a decision from the same court to the same effect. None of these authorities reach this situation. There are no specific findings of fact, but mere conclusions from the evidence embodied in the opinion in the way of argument or reasons for the rendition of the particular decree. But, if there were such, the rule invoked does not reach to this character of cases. The appellants could safely try their case, however, upon the rules ordinarily in force in regard to the findings of fact by trial courts in chancery and could even treat all the judges' opinions as specific findings of fact, even if we were trying the case on the defendants' plan of dividing expenses, and not relying on the failure of plaintiffs to make their case.

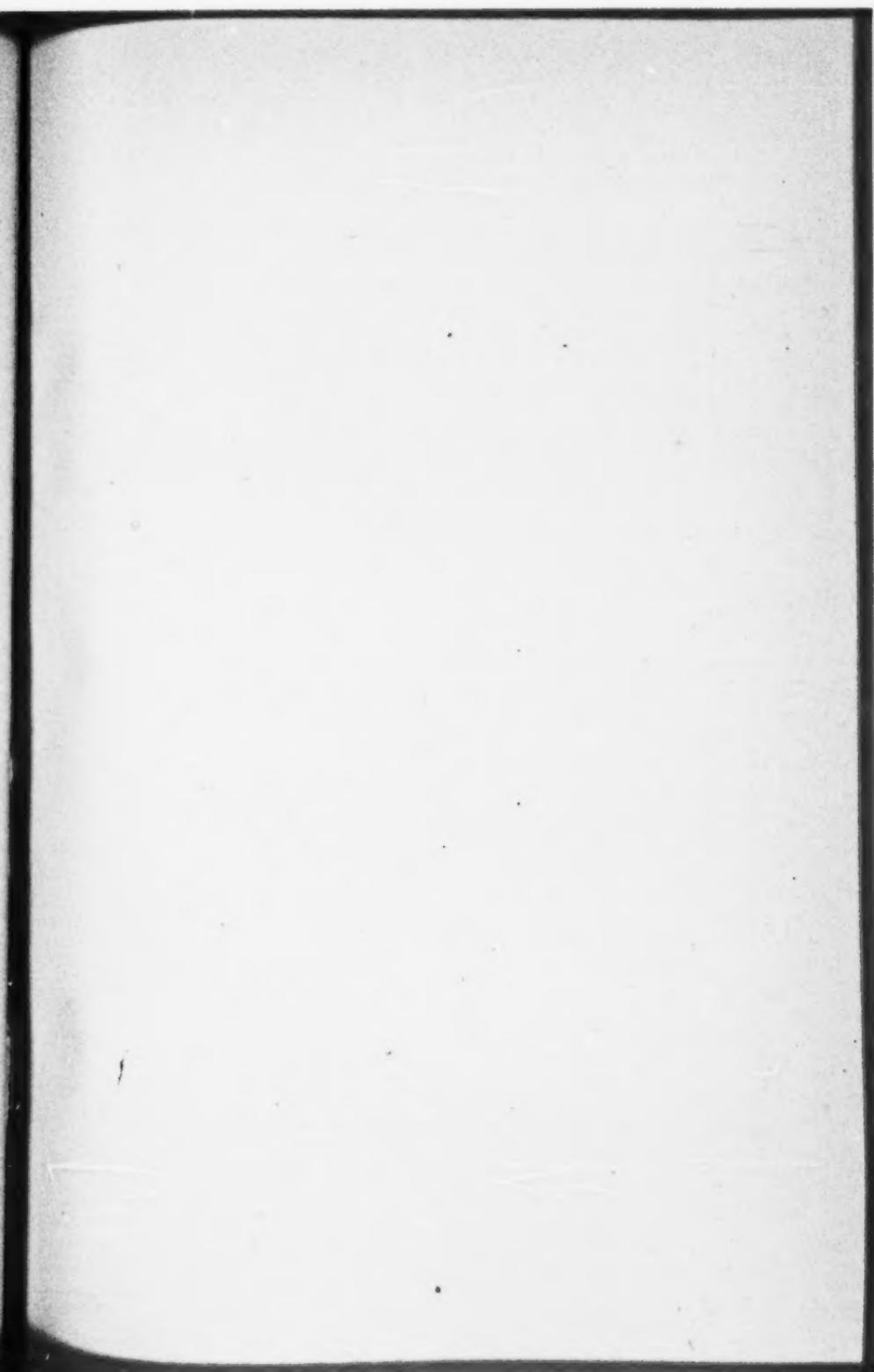
We believe that we have in our former brief and in this one demonstrated that the proportion of State and interstate traffic on the local and through trains, adopted in the State's exhibit, is not only supported by a preponderance of the evidence, but rises to the height of established facts, and the finding to the contrary is against the decided weight of the evidence, and practically against all of the evidence; and is against the undisputed statistics of the plaintiffs' own exhibits, and is supported by the plaintiffs' witnesses in chief. The discarding of the October statistics on the Southwestern road is without any evidence whatever to support it. If the defendants were the plaintiffs seeking to prove the rates were compensatory, all the other adverse findings of the trial court would be but harmless error,

... if these months are accepted, the rates are proved compensatory beyond cavil. In fact, the case was disposed of in the lower court as if the defendants failed to prove the rates to be compensatory, when the truth is, the plaintiffs must prove the rates are confiscatory by clear and decisive evidence (almost beyond a reasonable doubt), or else fail. In fact, the rejection by the trial court of the plaintiffs' theory and the trial on the defendants' theory, reversed the relative positions, and practically required the defendants to prove by a preponderance of the evidence that their plan of dividing expenses showed the rates to be compensatory. Really, the defendants can stand that test under the facts, and are entitled to a decree as having established the compensatory return of the rates by a preponderance of the evidence; we can meet this harsh rule, and are entitled to a reversal on it under the authorities cited: Whereas, the rule is the opposite, and more, see former brief, page 48, on quantum of proof necessary to sustain these suits.

However, as we understand the position of the Court in these grave constitutional matters, it will not be troubled by the effect of the findings of the lower court.

Respectfully submitted,

JOSEPH M. HILL,
Special Counsel.





440. 441.
Nos. ~~843~~ and ~~844~~

Office Supreme Court, U. S.
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JAMES H. MCKENNE

IN THE

Supreme Court of the United States

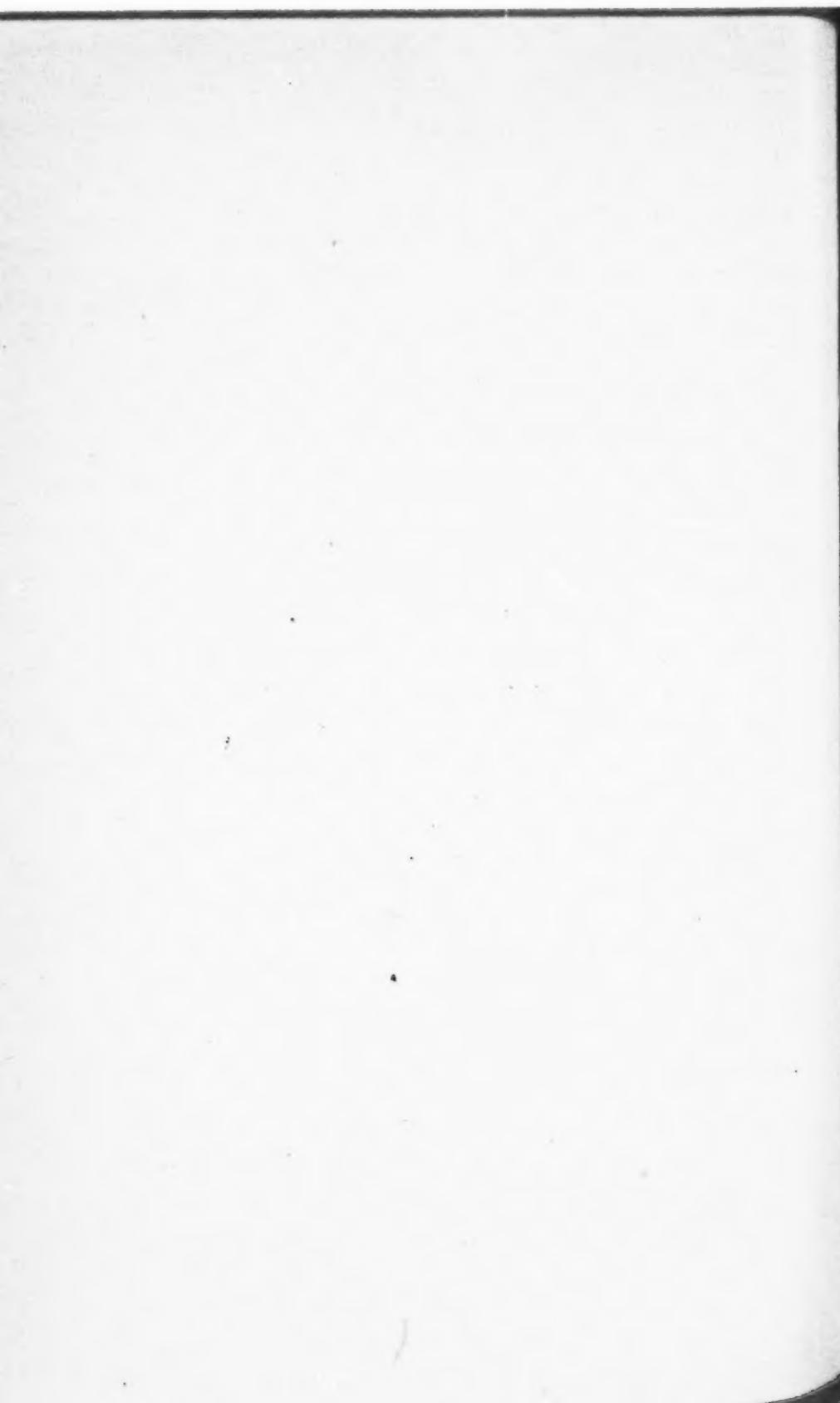
OCTOBER TERM, 1911.

ARKANSAS RATE CASES.

**RAILROAD SUGGESTIONS AS TO WHY STATE FREIGHT
EXPENSES SHOULD BE ASCERTAINED UPON A
REVENUE BASIS.**

JOHN M. MOORE,

Solicitor for Railroads.



IN THE SUPREME COURT OF THE UNITED STATES,

OCTOBER TERM, 1911.

ARKANSAS RATE CASES.

RAILROAD SUGGESTIONS AS TO WHY STATE FREIGHT EXPENSES
SHOULD BE ASCERTAINED UPON A REVENUE INSTEAD OF A
TON MILE BASIS.

Upon the closing argument in the Missouri Rate Cases, Mr. Justice Hughes asked for the reasons why the state freight expenses should be ascertained upon a revenue instead of a ton mile basis. In those cases the reasons are set forth in Johnson's Exhibit 55, appearing in the original brief therein (pp. 194-197), together with those given by the courts. (Id., pp. 181-194.)

In addition thereto, there has been prepared for use herein a statement of Mr. James Peabody, of the A., T. & S. F. R. Co., of the many reasons why the revenue basis is correct, and it is here submitted as an additional argument herein.

WHY THE REVENUE BASIS FOR THE DISTRIBUTION OF EXPENSES
AS BETWEEN STATE AND INTERSTATE TRAFFIC IS BETTER THAN
THE TON MILE BASIS.

In the making of freight rates two considerations are always present and consciously apprehended, although, perhaps, not always specifically applied. These are the cost of the service to the carrier and the value of the service to the shipper. The "cost of service"

takes account of weight, distance, bulk, volume, insurance, handling, switching, maintenance of tracks, terminals and equipment, dispatching, hauling, receiving, delivering and accounting, all of which may be broadly divided under two general heads, viz., those costs which relate to distance and those which are incurred irrespective of distance, or, in other words, hauling or movement costs, and terminal or stationary costs. The "value of the service" embraces such items as competition, both of other carriers and of markets, relation to public need as a luxury or necessity, the development of natural resources and the stimulation of trade, all modified by the commercial necessity of distributing the total transportation charge among the different articles of commerce in the ratio that will best facilitate their movement, or, more popularly expressed, assigning to each article the proportion of the total charge it ought properly to bear, having in mind the necessity for an adequate return on the property of the carrier performing the service.

As already suggested, these expenditures involved in the cost of service naturally subdivide under two heads, viz., transportation or movement costs and terminal or stationary costs, the one depending upon distance, the other having no reference thereto. Transportation costs include movement of trains, a portion of the maintenance charges both of track and equipment and also of insurance and accounting. As applied to these items the ton-mile (weight multiplied by distance) constitutes a measure which is more or less valuable for comparative purposes. Under the head of terminal or stationary costs come the remaining expenditures, all of which are constant whether the shipment moves five miles or five hundred and which constitute, for the average distance hauled, by

far the larger part of the outlay. With these items the ton-mile has no connection, distance not being a contributing factor.

It is patent, therefore, that the ton-mile as being wholly unrelated to so material a part of the total cost cannot be correctly employed as a basis for apportioning expenses. The revenue basis, being the resultant expression of the rate schedules, which take into account all of the elements going to make up the total cost, including the ton-mile, is therefore a much more comprehensive and accurate measure by which to apportion expenses. Neither method, however, takes account of the fact that of the large tonnage of the through train, a much greater proportion is interstate freight as compared with state freight than is the case with the local trains hauling a small tonnage. These relative proportions are shown in the two exhibits of tests made by The Atchison, Topeka and Santa Fe Railway. (Rec. #936) 7

(First test November 30 to December 6, 1908, inclusive.)

Analysis of through trains—15,046 train miles.

Trans-state tons	27,054	ton-miles 5,411,836=86.00%)
Interstate	9,745	797,201=12.07) 96.87%
State	1,905	83,795= 1.33)

6,292,832	100.00%
Consolidated makes	
Trans-state	5,411,836
Interstate	962,754
State	121,746

6,496,336

Analysis of local trains—2,234 train miles.

Interstate tons	2,204	ton-miles 165,553=81.35%)
State	863	37,951=18.65%) 3.13%
		203,504 100.00% 100.00%

(Second test November 30 to December 6, 1908, inclusive.)

Analysis of through trains—11,722 train miles.

Trans-state tons	23,011 ton miles	4,579,108	= 81.12%
Interstate	6,191	1,005,071	= 17.80%
State	1,511	60,640	= 1.08%
		5,644,819	100.00%
		Consolidated makes	
		Trans-state	4,579,108
		Interstate	1,174,664
		State	89,849
			5,843,621

Analysis of local trains—2,274 train miles.

Interstate tons	2,039 ton miles	169,493	= 85.30%
State	892	29,208	= 14.70%
		198,701	100.00% 100.00%

Exhibits

These ~~statements~~ show that the expense attaching to the state freight was in both cases more than three times as much as for interstate, a result that is readily apprehended when it is observed that 81 per cent. of the movement was trans-state on which no terminal or state expense was incurred in Missouri but only the expense of hauling or moving, that 17.3 per cent. of the movement was interstate on which only one terminal was chargeable to Missouri, while only 1.7 per cent. of the traffic was intrastate on which both terminals accrue to the state.

These exhibits further show that the cost per train mile of through and local trains is estimated the same although the local trains actually cost more to operate, because of higher wages and larger crews, but the cost per ton mile on the local train is very much larger by reason of the much smaller tonnage. It is for this reason that in making an estimate of the cost of state freight something must be added to the average cost of the total to offset this extra expense.

MISSOURI STATE TRAFFIC.

Appended herewith is a section of the class tariff of The Atchison, Topeka and Santa Fe Ry. applicable to Missouri state traffic: I. C. C. No. 5723.

LOCAL FREIGHT TARIFF APPLYING BETWEEN STATIONS IN MISSOURI ON THE ATCHISON, TOPEKA & SANTA FE RY.

Distances, (In Miles)	Rates in Cents per 100 lbs.									
	Any Quantity				Car Loads Only					
	1	2	3	4	5	A	B	C	D	E
5 miles and under ..	15	12	10	7½	6	7	5	4½	4	3
10 miles and over 5	18	14½	12	9	6½	8	6	5	4½	3½
15 miles and over 10	20	16	13	10	7	9	7	6	5	4
20 miles and over 15	22	17½	14	11	7½	9½	7	6½	5½	4½
25 miles and over 20	24	19	15½	12	8	10	7½	7	6	5
30 miles and over 25	25	20	16	12½	8	10½	7½	7½	6½	5
35 miles and over 30	27	21½	17½	13½	8½	11	8	7½	6½	5½
40 miles and over 35	28	23	18	14	9½	12	8½	8	7	5½
45 miles and over 40	29	24	19	14½	10	12½	9	8½	7	5½
50 miles and over 45	30	25	20	15½	11	13	10	9	7½	6
55 miles and over 50	31	26	20½	16	11½	13	11	9	7½	6
60 miles and over 55	32	27	21½	16	11½	13½	11	9	8	6½
65 miles and over 60	33	27½	22½	16½	12	14	12	9½	8	6½
70 miles and over 65	34	28	23	17	12½	14½	12	9½	8	6½
75 miles and over 70	35	29	23½	17½	13	15	13	10	8½	7
80 miles and over 75	36	30½	24	18	13	15	13	10	8½	7
85 miles and over 80	37	30	24½	18½	13½	15½	13½	10½	9	7½
90 miles and over 85	38	31	25	19	14	16	14	11	9	7½
95 miles and over 90	39	32	25½	19½	14½	16½	14½	11½	9½	7½
100 miles and over 95	40	33	26	20	15	17	15	12	10	8
105 miles and over 100	41	33½	26	20½	15½	17	15	12	10	8
110 miles and over 105	42	34	26½	20½	15½	17½	15½	12½	10½	8½
115 miles and over 110	43	34½	27	21	16	18	16	13	10½	8½
120 miles and over 115	44	35	27½	21½	16½	18½	16½	13	10½	8½
125 miles and over 120	45	36	28	22½	17½	19½	17	13½	11	9
130 miles and over 125	46	36½	28½	22½	17½	20	17	13½	11	9
135 miles and over 130	47	37	29	23	18	20½	17½	14	11½	9
140 miles and over 135	48	37½	30	23½	18½	21	17½	14	11½	9
145 miles and over 140	49	38½	31	24	19	21½	17½	14½	11½	9
150 miles and over 145	50	40	32	25	20	22	18	15	12	9½
155 miles and over 150	51	41	32½	25	20	22	18	15	12	9½
160 miles and over 155	52	42	33	25½	20½	22½	18	15½	12½	9½
165 miles and over 160	53	43	33½	25½	20½	23	18½	15½	12½	9½
170 miles and over 165	54	43½	34	25½	20½	23½	18½	15½	12½	9½
175 miles and over 170	55	44	35	26	21	24	19	16	13	10
180 miles and over 175	56	44½	35	26	21	24	19	16	13	10
185 miles and over 180	57	45	35½	26½	21½	24½	19	16½	13	10
190 miles and over 185	58	45½	35½	26½	21½	24½	19	16½	13½	10½
195 miles and over 190	59	46	36	26½	21½	24½	19	16½	13½	10½
200 miles and over 195	60	47	36½	27	22	25	19½	17	14	11

ILLUSTRATIVE DEMONSTRATION.

For the purpose of demonstration first class and class E rates, being respectively the highest and lowest of the class rates, have been applied to a car of each class to each of three points the average of which most nearly approximate in distance from the state line the actual average haul on state traffic, 47.4 miles. (Rec. 4957.) The average tonnage of first class merchandise, which consists of articles of light weight and large value and which are both loaded and unloaded by the carrier is, on The Atchison, Topeka and Santa Fe Railway, 5 tons per car, while the average loading of class E, carload freight, is 30 tons or six times as much. The rates on these respective classes are as follows:

	Miles	1st class per 100 lbs.	Class E per 100 lbs.
State line to Gorin, Missouri	26	25¢	5¢
Hurdland	49	30	6
Ethel	75	35	7

An examination of the tariff will show that generally the first class rates increase in the ratio of 5 cents for each 25 miles and the class E rates increase in the ratio of 1 cent for each 25 miles. It is apparent, therefore, that these rates may be taken as representing the hauling or moving charge for each 25 miles for the reason that the terminal charge remaining constant regardless of the length of haul, the changes result from the application of the hauling charge only. It also follows that the remainder of the rate is to take care of the terminal or stationary costs, none of which are affected by distance. Apportioning the rates on this basis we find the charges to be as follows:

	Miles	Revenue per 100 per ton	Haulage proportion per 100 per ton	Terminal proportion per 100 per ton
On 1st class:				
Gorin	26	25¢	\$5.00	5¢ \$1.00
Hurdland	49	30	6.00	10 2.00
Ethel	75	35	7.00	15 3.00
On Class E:				
Gorin	26	5	1.00	1 .20
Hurdland	49	6	1.20	2 .40
Ethel	75	7	1.40	3 .60

The result of the movement of the six cars would be as follows:

	Total Revenue	Haulage proportion	Terminal proportion
Gorin	\$55.00	\$11.00	\$44.00
Hurdland	66.00	22.00	44.00
Ethel	77.00	33.00	44.00
	<hr/> \$198.00	<hr/> \$66.00	<hr/> \$132.00

MISSOURI INTERSTATE TRAFFIC.

The average haul in Missouri on interstate traffic is approximately double the average haul on state traffic. (Rec. ~~449-56~~) Applying the same tariff on the same commodities from Kansas City, Kan., to points most nearly approximating a distance twice as far as the haul on the state traffic the result is as follows:

	Miles	1st class per 100	Class E per 100
Kansas City, Kan., to			
Hardin, Missouri	48	30¢	6¢
Rothville, Missouri	100	40	8
Gibbs, Missouri	147	50	9.5

Apportioning these charges between hauling and terminal on the same basis as before we have:

	Miles	Revenue per 100 per ton	Haulage proportion per 100 per ton	Terminal proportion per 100 per ton
On 1st class:				
Hardin, Mo.	48	30¢	\$6.00	10¢ \$2.00
Rothville, Mo.	100	40	8.00	20 4.00
Gibbs, Mo.	147	50	10.00	30 6.00
On Class E:				
Hardin, Mo.	48	6	1.20	2 .40
Rothville, Mo.	100	8	1.60	4 .80
Gibbs, M.	147	9.5	1.90	5.5 1.10

It will be observed that this distribution provides for exactly the same terminal charge on the same commodity in each car on both state and interstate, the variable attaching only to the haulage charge. The ton-mile basis ignores this vital feature. The result of the movement of these six cars of interstate freight would be as follows:

	Total Revenue	Haulage proportion	Terminal proportion
Hardin, Mo.	\$66.00	\$22.00	\$44.00
Rothville	88.00	44.00	44.00
Gibbs	107.00	63.00	44.00
	<hr/>	<hr/>	<hr/>
	\$261.00	\$129.00	\$132.00

As Kansas City, Kansas, is at the state line and there is no haulage in Kansas but only a terminal charge for that state, half of the above terminal charge must be deducted from the above to ascertain the total revenue in Missouri.

State	\$198.00	= 50.38%
Interstate. \$261. less $\frac{1}{2}$ terminal	195.00	= 49.62
	<hr/>	<hr/>
Assumed operating ratio 70%	275.10	
State expense 50.38% of \$275.10	138.60	
Interstate expense, 49.62% of \$275.10	136.50	

The result thus obtained shows that without any allowance for the extra cost of doing the state business, the expense assignable thereto is slightly greater than that accruing to the interstate traffic, but these expenses must of course be readjusted to provide for the extra cost of the state freight haul. Using Judge McPherson's basis, viz., that it costs 50 per cent. more to earn \$1 on Missouri state traffic than on interstate traffic, the result would be as follows:

Formula.

$\frac{50.38\%}{49.62\%} \times \frac{1\frac{1}{2}}{1} = \frac{75.57\%}{49.62\%} \div \frac{125.19}{125.19} = \frac{60.36\%}{39.64\%}$		
<hr/>		
100.00%	125.19	100.00%
State freight revenue		\$198.00
State freight expenses (60.36% of \$275.10)		166.05
<hr/>		
Apparent surplus		\$31.95
Interstate freight revenue		\$195.00
Interstate freight expenses (39.64% of \$275.10)		100.05
<hr/>		
Apparent surplus		\$85.95

If we use a larger factor for extra expense on state freight as, for instance, that adopted by Mr. Justice Vandevanter when circuit judge in the Arkansas case, viz., two times the cost, we would have—

Formula.

$\frac{50.38\%}{49.62\%} \times \frac{2}{1} = \frac{100.76\%}{49.62\%} \div \frac{150.38}{150.38} = \frac{67.00\%}{33.00\%}$		
<hr/>		
100.00%	150.38%	100.00%
State freight revenue		\$198.00
State freight expenses (67.00% of \$275.10)		194.32
<hr/>		
Apparent surplus		\$3.68
Interstate freight revenue		\$195.00
Interstate freight expense (33.00% of \$275.10)		90.78
<hr/>		
Apparent surplus		\$104.22

In the last above computation the basis not only appears to be, but is, excessive, as applied to the traffic taken to illustrate the proposition, for the reason that the traffic here used for illustrating the proposition includes no trans-state business which constitute so large a proportion of the actual traffic—81 per cent. as shown by the test figures—and on which only the haulage expenses are chargeable against Missouri. The computation will nevertheless illustrate how the application works out, and not only serves to demonstrate the correctness of the theory, but shows that as always has been done by the courts, existing conditions must be con-

sidered in determining the factor to be used in connection with the added cost.

THE TON MILE BASIS.

Applying the ton mile basis of division of expenses to the illustrative traffic here used, the results show at a glance the absurdity of that proposition.

State ton miles	5250
Interstate	10325
Total	15575
Total freight expense	$\$275.10 = 1.7603\text{c}$ per ton mile
State freight earnings	\\$198.00
State freight expenses (5250 ton miles at 1.7603)	92.75
Apparent surplus	\\$105.25
Interstate freight earnings	\\$195.00
Interstate freight expenses 10325 ton miles at 1.7603	182.35
Apparent surplus	12.65

Nothing could be more conclusive as to the error of the ton mile basis than these results. Here we have state traffic consisting of identical shipments hauled half the distance with two terminals equal to \$46.20 (70 per cent. of one-half of \$132.00) more expense, yielding a net revenue over eight times as large as the interstate shipments with only one terminal expense.

The contention that under the revenue theory all that is needed to double the expense on the state traffic is to double the rates is manifestly unfounded as well as absurd. Tariff rates, both state and interstate, proceed, as mileage increases, on the same general scale. The fact that at some point in the tariff an imaginary line fixing a state boundary runs through the tariff makes no difference in the scale of rates. The same rate applies for the same distance whether the haul is on either side of the state line or across it. The reason why the rev-

enue, as measured by the ton mile, is higher on state than on interstate is because the state haul averages much shorter than the interstate haul and therefore the heavy terminal expense which under similar circumstances is the same in both cases is loaded upon a shorter mileage in the one case than in the other. It not only is never the fact, but it would be manifestly impossible that any scale of rates should be doubled simply because of the crossing of an imaginary line.

JOHN M. MOORE,
Solicitor for Railroads.

APPEAL

APPEAL

JAMES H. WISE, JR.

The Arkansas Rate Cases

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS,

APPEAL

v. No. 441

ST. LOUIS, IRON MOUNTAIN & SOUTHERN
RAILWAY COMPANY,

APPEAL

AND

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS,

APPEAL

v. No. 440

ST. LOUIS SOUTHWESTERN RAILWAY
COMPANY

IN THE SUPREME COURT OF THE
UNITED STATES

BRIEF AND ARGUMENT FOR APPELLANTS
IN THE ABOVE ENTITLED CAUSES

MANN S. CLARK,

SAMUEL H. WISE,

JAMES H. WISE, JR.

Subscribers,

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IN THE

Supreme Court of the United States

R. P. ALLEN *et al.*, RAILROAD COMMISSIONERS
OF THE STATE OF ARKANSAS,

v. No. 813.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN
RAILWAY COMPANY, *et al.*

R. P. ALLEN *et al.*, RAILROAD COMMISSIONERS
OF THE STATE OF ARKANSAS,

v. No. 814.

ST. LOUIS SOUTHWESTERN RAILWAY
COMPANY, *et al.*

BRIEF AND ARGUMENT ON BEHALF OF APPELLEES.

STATEMENT.

These cases represent nineteen suits filed by as many different railroad corporations operating railroads in the State of Arkansas, for the purpose of enjoining freight and passenger rates in force in that State in 1907.

The Legislature of Arkansas passed an act creating a Railroad Commission and defining its powers at the session of 1899. Section 9 of the act provides:

"That every person or corporation operating any railroad or express business in this State is hereby required to furnish said Commission, within fifteen days after notice to do so, with the rate sheet and tariff charges for transportation of every kind over such railroad, it shall be the duty of said Commission to examine and revise said rate sheet and tariff charges for freight or express matter for each railroad in this State, and determine whether or not, and in what manner, if any, such charges and rates are more than just and reasonable compensation for the services rendered, and whether or not, and in what manner, if any, said charges and rates are in violation of any of the provisions of this act; and said Commission will make reasonable and just rates of freight, express and passenger tariffs to be observed by all persons and corporations operating any railroad or engaged in transporting persons or property as express or freight in this State; shall make rules and regulations as to charges at any and all points for the necessary hauling and delivering of express and freight; regulate rates and charges for such service on all railroads as, in their judgment, justice to the public and said person or corporation may require; and so make the same conform to the requirements of this act." (Acts of 1899, pp. 86-87.)

Section 10. "Every person or corporation engaged as aforesaid, shall receive, load, unload, transport, store and deliver to the consignee thereof any and all property offered for shipment, whether as freight or express matters at and for charges not greater than those specified in such schedule, as may at that time be in force, and shall, on demand, issue to shippers, duplicate freight or express receipts, which shall state the class of freight shipped, the weight and charges." (Acts of 1899, p. 88.)

Section 14. "In case any person or corporation, as defined in this act, engaged as aforesaid, shall do, or permit to be done, any act, matter or thing in this act required to be done, or shall be guilty of any of the violations of the provisions of this act, such person or corporation shall be held to pay to the person, firm or corporation injured thereby, double the amount of damages so sustained, and all costs, to be recovered by the person, firm or corporation so damaged, in any court having jurisdiction of the amount, where

the person or corporation causing the damage can be found, or has an agent or place of business." (Acts of 1899, p. 91.)

Section 18. "That if any person or corporation operating a railroad or express company in this State, or any receiver, trustee, or lessee of any such person or corporation as aforesaid, shall violate any of the provisions of this act, or aid or abet therein, or shall violate the tariff of charges, as fixed by said Commission, or any of the rules regarding railroads or express companies, as made by said Commission, and for which there is no other penalty prescribed in this act, such person, or corporation, or receiver, trustee or lessee shall be liable to a penalty of not less than five hundred nor more than three thousand dollars for each violation of this act, or such tariff of charges or rules and regulations, and such penalty may be recovered by an action to be brought in the name of the State of Arkansas, in the county in which such violation may occur. * * * Nothing in this section shall be so construed as to in any manner interfere with the action for damages as provided in section fourteen of this act." (Acts of 1899, pp. 93-94.) (Kirby's Digest of the Statutes of Arkansas, 1904, sections 6802, 6804, 6808, 6813.)

By an act approved April 8, 1903, it is provided:

Section 2. "That all persons, companies or corporations operating any railroad in this State that forms part of a continuous line of railway communication to any point in the State shall issue through passenger tickets and check baggage through to and from points on such continuous line of communication at through rates and fares; that all freight and traffic carried wholly within this State to and from stations on lines of continuous carriage aforesaid shall be waybilled through at through rates and tolls from point of departure to point of arrival without being rebilled at junction points, and in case of carload freights the forwarding carrier shall receive and forward the same in the car or cars in which the freight is tendered without breaking bulk of package."

Section 3. "That in all cases where there is by physical connection of railroads a continuous line of railway communication between railroad stations within this State,

whether such stations be on railroads operated by one and the same company or corporation or on railroads operated by different and independent companies or corporations, it shall be the duty of the Railroad Commission of this State, to and from such stations, to make just and reasonable rates of freight, express and passenger traffic, to be observed by all persons, companies or corporations, operating any railroad or engaged in transporting persons or property as express or freight in this State."

Section 4. "If any two or more connecting lines of railroad in this State shall fail to agree upon a fair and just division of the charges arising from the transportation of freights, passengers or cars over their lines, the Commission shall make the division and shall fix the pro rata part of such charges to be received by each of said connecting lines." (Acts of 1903, p. 220.)

Section 5 of the act provides that any person or corporation violating any of its provisions shall be liable to a penalty of not less than \$500 nor more than \$3,000 for each violation of the act, or of the tariff or charges or rules and regulations prescribed therein, to be recovered in an action to be brought in the name of the State.

An act approved April 19, 1907, provides that a shipper on whose order a car or cars have been placed for loading shall be allowed forty-eight hours free time for loading, computed from 7 A. M. the day after such car or cars have been placed subject to the shipper's order (section 6). That the consignee of cars containing fertilizers, hay, coal, coke, brick, sand, and lumber in covered cars, and meat, potatoes, grain and grain products, cotton seed and cotton seed hulls in bulk, shall have seventy-two hours free time for unloading from 7 o'clock, A. M., the day fol-

lowing that upon which legal notice of arrival is given, and on all other cars forty-eight hours. Whenever the weather during the period of free time is so severe, inclement or rainy during business hours that it is impossible or impracticable to secure means of loading or unloading freight, or when from the nature of the goods loading or unloading would cause injury or damage, such time shall be added to the free time. A consignee or consignor five miles or more from the depot, whose freight is destined to or from his place of business or residence, shall not be subject to storage or demurrage charges until sufficient time has elapsed after notice for him to remove or load his goods by the exercise of ordinary diligence, but the time limit shall not exceed five days. (Sections 10, 11 and 12.)

Section 22 provides that any person or corporation operating a railroad who shall violate any of the provisions of the act or the tariff of charges or rules of the Railroad Commission in regard to furnishing cars on application of shippers, transportation, delivery and storage of freight, etc., for which there is no other penalty prescribed in the act, shall be liable to a penalty of not less than \$500 nor more than \$3,000 for each violation, to be recovered in an action to be brought in the name of the State.

Section 6611 of Kirby's Digest of the Statutes of Arkansas as amended by an act approved February 9, 1907, provided the following maximum charges for transportation of passengers by railroads within the State:

On lines 15 miles or less in length, 5 cents per mile;

Over 15 miles and less than 85 miles in length, 3 cents per mile;

Over 85 miles, 2 cents per mile.

Children, in charge of an adult, between the ages of five and twelve years, half the above rates, and children under five years of age, free (Acts of 1907, p. 10).

Sections 6615 and 6618 provide that each passenger shall be entitled to transport on the same train and without any additional charge 150 pounds of baggage, and that no railroad in the State over five miles in length shall charge more than 12½ per cent of the cost of first-class fare between all points in this State per hundred pounds for excess of baggage over 150 pounds; and section 6617 makes a carrier responsible, as carrier, for all baggage or goods checked as baggage for forty-eight hours after the same has reached its destination, and prohibits a charge for storage during that time or a greater charge than five cents per day after the expiration of said time on baggage not exceeding 150 pounds.

Section 6620 provides a penalty of not less than \$50 nor more than \$300 and attorney's fee, to be taxed as costs by the court, on the carrier, or any officer, agent or employe thereof, who shall knowingly and wilfully charge a greater rate of fare than is prescribed in the preceding sections.

The statute provides that the Railroad Commission shall be composed of three persons, to be chosen, respectively, from certain designated districts in the State. The

first Commissioners were appointed by the Governor, and their successors were elected at the first general election thereafter. In the year 1900 the Commission prepared and put in force a general tariff of rates for the transportation of all kinds of freight within the State. The Commission was composed at that time, as it has ever since been, of men who had never had any experience in connection with the business or operation of railroads. The first tariff continued in force with changes, made from time to time, until the 15th of July, 1904, when the Commission prepared a new and revised tariff, which went into effect and continued in force until June 4, 1908, at which time Standard Freight Distance Tariff No. 3, applying on all classes and commodities and between all railroad stations in the State, subject to Western Classification as adjusted to the traffic, cancelling the tariff theretofore in force, was promulgated, to take effect and be in force on and after July 15, 1908. This tariff contained many of the rates and regulations that were contained in the tariff of 1904, with such changes and amendments as had been made in the former tariff. Said tariff also put in force through joint rates for the transportation of freight over connecting lines of railroad, although under different ownership and management, by adding to the rates prescribed in the schedules for a single line or a continuous mileage certain differentials and by fixing a maximum of through joint rates on classes and commodities to be charged by all railroads over which freight might be transported between stations within the State. At the same time the Commission promulgated

the rates for the transportation of passengers prescribed in in the act of the Legislature of February 9, 1907, aforesaid, although the act was self-executing and the rates prescribed by it had been in force on all the railroads in the State some time prior to the promulgation of this tariff.

On July 18, 1908, the appellees and other corporations operating trunk-line railroads within the State filed their bills in equity in the United States Circuit Court for the Western Division of the Eastern District of Arkansas, in which it was alleged that the rates prescribed for the transportation of freight and passengers by the aforesaid tariff were not sufficient to yield any adequate and reasonable profit or return upon the value of the property used in and about said business or for service rendered the public, after paying the cost of conducting the business, including operating expenses, maintenance and fixed charges properly appertaining thereto under economical operation and management of the properties and conduct of the business; were unreasonable, unjust and confiscatory, and deprived the plaintiffs of their property without due process of law, and of the equal protection of the laws, in violation of the provisions of the Fourteenth Amendment to the Constitution of the United States. It was further shown and alleged that the said lines of railroad were operated in and through different States, and that a very large amount of interstate traffic passed over them respectively; that the rates prescribed by the Commission had a controlling influence on through rates charged on interstate shipments. Many of them were

established by said Commission with the intention and for the purpose, and did, in fact, have the effect, of regulating and fixing interstate rates, in violation of the Constitution and laws of the United States, and were an invasion by the Commission of the powers, rights and duties vested by act of Congress in officials of the United States.

The bills also alleged that the penalties and liabilities imposed by the provisions of the statutes of said State upon the persons and corporations owning and operating railroads in the State and the officers, agents and employes thereof, for the failure or refusal to put in force any tariff prescribed by said Railroad Commissioners, or by statute, or to comply with any of the rules, regulations and orders prescribed by said Commission, were so severe as to constrain persons and corporations operating railroads in said State to submit to such unreasonable, confiscatory and illegal exactions rather than take the risk of incurring said penalties, and that the complainants had in good faith attempted to comply with all the rates, rules, regulations and requirements prescribed by said Commission and by statute rather than to incur the aforesaid penalties and liabilities applying to the corporations operating said roads and the officers, agents and employes thereof; but further compliance would result in irreparable loss and be destructive of the property, rights and interest of those owning and interested in the properties.

The bills were originally filed against R. P. Allen, John W. Crockett and John D. Hampton, as Railroad

Commissioners. The two latter were succeeded during the progress of the case by George W. Bellamy and William F. McKnight, who, upon proper orders of the court, were substituted as defendants in the place of their predecessors in office. Each of the bills also made individual shippers and patrons of the road defendants as representatives of their class, for the purpose of restraining actions by individuals during the progress of the case. The bills contained the usual prayer for relief by temporary and perpetual injunction against the alleged rates and the rules, regulations and orders of the Railroad Commission and the penalties prescribed by the statutes of the State on their enforcement.

(R. 1-21.)

Answers were filed on July 25, and applications for temporary injunctions were heard before the Honorable Willis VanDevanter, Circuit Judge, at St. Paul on September 3. The following order of injunction was entered:

"This cause came on to be heard on the motion of the complainant for a temporary restraining order, and after submission of the proofs was argued by counsel; and now upon consideration thereof, it is ordered as follows:

"That as to the complainant, all the rates prescribed by the defendants, the Railroad Commissioners of the State of Arkansas, for transporting and carrying intrastate freights in said State in Standard Freight Distance Tariff No. 3, which was issued by the order of said Commissioners, which took effect on June 15, 1908, and all amendments and supplements thereto, be and are hereby suspended and the enforcement of each and all thereof be and the same is hereby restrained and enjoined until the further order of the Court.

"It is further ordered that the enforcement of the two-cent per mile rate, prescribed in an Act of the Legislature of the State of Arkansas, approved February 9, 1907, entitled, "An Act to amend section 6611 of Kirby's Digest of the Statutes of Arkansas, by fixing passenger rates in this State, and for other purposes," and also prescribed in the order made by the defendants, the Railroad Commissioners of the State of Arkansas, on May 15, 1907, putting in force the rates prescribed by the aforesaid statute, be and the same are hereby suspended and restrained as to the complainant herein, until the further order of the Court.

"It is further ordered that no suit or suits, action or actions, shall, at any time, be instituted or maintained against the complainant, its officers, agents or employes, by any of the defendants for or on account of its failure to continue or keep in force any of the aforesaid inhibited rates, during the time that this order shall continue in force, and that the defendants, the Railroad Commissioners of the State of Arkansas, be and they are hereby enjoined from at any time instituting or prosecuting any suit or action as aforesaid, or causing the same to be instituted or prosecuted by any officer, agent or attorney, of said Commission, or by any officer of the State of Arkansas, or any other person for a failure to keep in effect and observe the aforesaid inhibited rates; that the defendants, Henry Leigh and George McLean, and all other persons and each of them from and after the time that they shall have knowledge of this order, be enjoined from at any time instituting any such suit or action for or on account of any failure of the complainant to keep in effect and observe said inhibited rates or for the recovery of damages by reason of such failure during the time that this order shall continue in effect.

"It is further ordered that complainant execute a bond to the United States of America in the penal sum of two hundred thousand dollars, conditioned that said complainant shall keep a correct account showing as respects every carriage of passengers or freight, the difference between the tariff actually charged and that which would have been charged had the rates inhibited hereby been applied, showing the particular carriage in question, and the stations be-

tween which the same occurred, the name of the person affected, so far as may be practicable, which record shall be made and kept subject to the further order of this court, and further conditioned that if it shall eventually be decided that so much of this order as inhibits the enforcement of existing rates should not have been granted, that said complainant shall, within a reasonable time to be fixed by the Court, refund in every instance to the party entitled thereto the excess of charge over what would have been charged had the inhibited rate been applied, together with lawful interest and damages.

"It is further ordered that this order suspending the aforesaid rates and restraining the said defendants take effect upon the filing of the aforesaid bond and the approval thereof by the clerk of this Court, but not within less than ten days hereof. Nothing recited in this order shall operate to prevent the said Railroad Commissioners of the State of Arkansas from establishing and enforcing any reasonably compensatory and lawful rates in place of those whose enforcement is hereby inhibited." (R. 38-39.)

Replications were subsequently filed.

On July 2, 1909, orders were entered in the cases of the St. Louis, Iron Mountain & Southern Railway Company and St. Louis Southwestern Railway Company, directing the standing master of the court to take testimony, with the usual power to compel the attendance of witnesses and the production of all books, papers, accounts, vouchers and other documentary evidence. The master was not directed nor authorized to make findings of law or fact and did not attempt to do so. The order provided that all testimony taken before the master might be used in each of the cases so far as applicable, as though they were consolidated and heard together (R. 89). The standing master died during the taking of the testimony, and Charles M. Rice

was appointed special examiner to take additional proof, with all the powers and subject to the directions given to the standing master (R. 94). The remaining cases have not been heard, but stand upon an agreement that the testimony taken in the cases now before the court may be used in all of them so far as applicable.

A large amount of testimony was taken and reported to the court by the master and the examiner.

No question is presented as to the total value of the property of the appellees in the State of Arkansas. It was stipulated by the parties that the assessment of the property of each of the respective roads for taxation multiplied by two (assessments having been made upon the basis of 50 per cent of the value) should be taken as the value of the property of each road for the purpose of the suit (R. 653). Pursuant to this agreement double the amount of the assessment was adopted and used by the court and accountants as representing the value of the property of each of the appellees. The basis of dividing the value as between state and interstate traffic was not agreed upon, but was determined by the court, as will be seen in reviewing the ruling. The value of the property of each of the appellees and the division thereof as made by the court is set out elsewhere.

The cases were heard and final decrees rendered on May 11, 1911. The following decree was rendered in each case:

"Now on this day comes the complainant by its solicitors, Moore, Smith & Moore, Esq., and also come the

defendants by their solicitors, Joseph M. Hill and James H. Harrod, Esq., and thereupon said cause having been argued and submitted upon the evidence and stipulations on file and of record in said cause, and having been taken under advisement at a former term of this court, and the court being well and sufficiently advised in the premises,

"It is accordingly ordered and decreed that the defendants, Robert P. Allen, George W. Bellamy and William F. McKnight, as Railroad Commissioners of the State of Arkansas, and Henry Leigh and George McLean and each of them, their agents, employes and successors, as well as all other persons patrons of complainant, either in the shipment of freight or as passengers, or as passengers between stations on complainant's road in the State of Arkansas, are hereby perpetually enjoined from enforcing or attempting, directly or indirectly, by any suit, or in any manner whatsoever, to enforce against the complainant, its officers, agents, employes or servants, any of the provisions of Standard Freight Distance Tariff No. 3 and amendments thereto adopted prior to the institution of this action, prescribing the rate or rates for the transportation of classes and commodities, or any provision of said tariff whereby any of said rates shall be continued in force, or from enforcing or attempting, directly or indirectly, by suit or in any other manner whatsoever, to enforce against complainant, its officers, agents, or servants, any of the provisions of an act of the General Assembly of the State of Arkansas entitled, 'An Act to amend section 6611 of Kirby's Digest of the Statutes of the State of Arkansas by fixing passenger rates in this State, and for other purposes,' approved February 9, 1907, or to enforce the provisions of any other act or acts of the Legislature of said State, providing penalties for noncompliance by complainant with the provisions and requirements of said Standard Freight Distance Tariff No. 3 and amendments thereto as aforesaid, or the aforesaid act of the Legislature of the State of Arkansas, fixing passenger rates in said State.

"It is further ordered that the costs incurred by complainants and defendants, respectively, in procuring the attendance of witnesses before the master, and in payment of the fees of stenographers in the recording of said testi-

mony, be borne by the complainant and the defendants, Robert P. Allen, George W. Bellamy and William F. McKnight, and that neither party recover from the other therefor; that all remaining costs, including master's fees, the complainant pay one-fourth and the defendants, Robert P. Allen, George W. Bellamy and William F. McKnight, Railroad Commissioners aforesaid, pay one-half, the other one-fourth to be paid by complainant in case No. 1637, the payment of said costs to be recovered by execution to be issued by the clerk of this court upon the application of either party in interest.

"It is further ordered that the bond for injunction filed by the complainant herein be released and the sureties thereon discharged from liability.

"And the Court hereby retains and reserves unto itself jurisdiction of the subject-matter of this suit and of all parties hereto, to the end that such other and further orders and decrees may be made herein as may become necessary by reason of any changed condition as to the facts, equities or rights that may hereafter take place or arise." (R. 105-106.)

Defendant Railroad Commissioners appealed from the decree. They assigned forty-six errors, viz.:

(1) The refusal of the court to sustain a motion to dissolve injunction on the ground that the bills were filed without first praying relief against the freight rates from the Commission, (Assignment 1); in not dismissing the bills on final hearing on the ground that Standard Distance Tariff No. 3 sought to be enjoined, had been in force with only minor changes for a period of six years prior to the filing of the suit and complainant had not applied to the Commission for relief, (Assignment 2); that the evidence showed that the general scheme of freight rates had been

in force since 1900, and that plaintiff had acquiesced for that period, (Assignment 3); in finding that the evidence showed an increased cost of operation for ten years prior to the filing of the suit, and that rates that had been remunerative ten years prior to the filing of the suit would no longer be so on account of the increased cost of operation and on such account there was no acquiescence, (Assignment 4); in holding that a reduction of passenger rates from three to two cents per mile was an excuse for complainants to seek relief in the Federal Court prior to applying to the Railroad Commission for relief against the rates. (Assignment 5.)

(2) In finding and decreeing that freight and passenger rates complained of would not afford a reasonable return upon the property and were confiscatory, and in not dismissing the bill. (Assignments 6, 7, 8, 9, 10, 11, 12, and 13).

(3) In finding that the period of six months fairly represented the earnings and expenses, and in not holding that the revenue and expense of October, 1907, fairly represented one-sixth of the said period. (Assignment 14.)

(4) Failure to charge plaintiff with fair rental value of the Bunch elevator. (Assignment 15.)

(5) In holding that the apportionment of expense for the repair of tools and machinery to Arkansas by plaintiff was fair. (Assignment 16.)

(6) In not deducting from operating expenses a fine of \$10,000 and costs incurred by plaintiff for issuing passes to members of the Legislature. (Assignment 17.)

(7) In charging the expense of Memphis and Fort Smith terminals to Arkansas, (Assignments 18 and 19); in charging salaries paid to lobbyists and fees paid attorneys outside the State to expense of operation. (Assignment 20).

(8) In holding that any part of the expense for leased lines known as the Paragould trackage and the Van Buren bridge, was chargeable to intrastate traffic, or that any part of the expense of said bridge was chargeable to the State of Arkansas. (Assignments 21 and 22.)

(9) In holding that the railroad was efficiently operated. (Assignment 23.)

(10) In apportioning the property between intrastate and interstate traffic on the revenue basis to ascertain the portion used in intrastate business. (Assignment 24.)

(11) In the bases adopted for apportioning expense between intrastate and interstate traffic. (Assignment 25.)

(12) In apportioning the miscellaneous expense on a revenue basis. (Assignment 26.)

(13) In declaring in the opinion that the State contended for a division of property and expense on the ton mile basis. (Assignment 27.)

(14) In finding that the intrastate freight rates were only 50 per cent higher than the interstate. (Assignment 28.)

(15) In using the revenue basis for dividing any expense, and, particularly, without allowing for the excess of

at least 50 per cent which the court found the state revenue was higher than the interstate. (Assignment 29.)

(16) In not adopting as a whole the plan of division presented by the State. (Assignment 30.)

(17) In not accepting the results of statistics obtained from the months of October, 1907, and October, 1908. (Assignment 31.)

(18) In charging to interstate business only 40 per cent of the expense of local trains. (Assignment 32.)

(19) In dividing maintenance-of-way expense on a revenue basis, and not making allowances for the difference between the intrastate and interstate revenue when using the revenue as a factor in dividing said expense. (Assignment 33.)

(20) In the division of expense between local and through trains in charging 50 per cent extra to yard locomotives as against the local trains and 75 per cent additional for local-locomotive mileage. (Assignment 34.)

(21) In charging 25 per cent extra to local trains for stopping and starting and 13½ per cent for terminal handling; in finding that through trains stop every 35 miles against 5 miles for local trains; in not charging interstate and trans-state traffic with the cost of starting and stopping freight cars and in making different allowance for interstate and trans-state traffic. (Assignment 35.)

(22) In not apportioning general expenses according to the plan adopted by the State and in charging the same

on the basis of the supervision and maintenance of equipment and transportation only. (Assignment 36.)

(23) In dividing the item of hire of equipment on the revenue basis and charging 30 per cent to local traffic. (Assignment 37.)

(24) In the basis adopted for the apportioning station expense. (Assignment 38.)

(25) In finding various omissions from the expense apportioned to the State in the State's plan of dividing expenses between intrastate and interstate traffic, and in finding that 8½ per cent should be charged to the local trains for such omissions, and in finding that the dead weight on local trains exceeded that on through trains 14 per cent. (Assignment 39.)

(26) In the basis adopted for apportioning fuel and locomotive expense and "other train expenses." (Assignment 40.)

(27) In charging the state passenger traffic with 10 per cent greater than the interstate passenger traffic. (Assignment 41.)

(28) In holding that the St. Louis Southwestern Railway freight and passenger traffic was more expensive than the Iron Mountain freight and passenger traffic. (Assignment 42.)

(29) In finding that the extra expense of intrastate traffic over interstate freight traffic for the Iron Mountain

Road was 210 per cent and on the St. Louis Southwestern Road 250 per cent. (Assignment 43.)

(30) In holding that the plaintiff was entitled to earn 6 per cent on the value of its property and 1.5 per cent surplus, and that a return of less than $7\frac{1}{2}$ per cent on the value of its property devoted to intrastate traffic was confiscatory, (Assignment 44); and in not holding that a return on the investment equal to the rate of interest prevailing on railroad securities was compensatory. (Assignment 45.)

(31) In retaining jurisdiction of the cause for any other purposes than to permit defendants to show a changed situation which might relieve them of the injunction. (Assignment 46.) (R. 2650.)

Some of the assignments relate to matters that do not affect the merits of the case and are immaterial; some of them are based on a misconception of the rulings of the court; others on assumptions of fact that do not exist, and only a few of them relate to matters that are material on this appeal.

The plaintiffs, in preparing their statistics, apportioned the value of the property between freight and passenger traffic and between state and interstate traffic of each kind on the basis of the gross revenue derived from each kind of traffic, and followed the same rule in apportioning the expense of operation as between the several kinds of traffic, making such allowance for extra expense in conducting

state freight and passenger traffic over interstate as, in the judgment of their operating officials and others experienced in such matters, would cover the increased cost. The statistics used by them were taken from the books of account, records and vouchers kept by the accounting department of each road, which were thrown open to the State's accountants and examined by them, and the correctness of which were not questioned.

The State, through its accountants, submitted a scheme for dividing state freight traffic by first apportioning the cost of operating local and through freight trains. After determining the cost of operating each class of trains, amounting, in the total, to \$2,592,298.33 out of the total expense of \$3,073,843.40, on various arbitrary assumptions upon which their theories were based, they divided the train cost between state and interstate traffic on the basis of the relative amount of ton miles of each class of freight transported on local and through trains. In order to determine the ton miles of state and interstate freight carried on each class of trains they ascertained the amount of freight carried on local trains during the month of October, 1907, from an examination of the wheel reports of freight trains made by the conductors and the waybills, and after ascertaining the movement on local trains, they deducted the amount so ascertained from the total shown on exhibit 26, which was prepared by the accountants of the railroad company at the request of the State, and contained a statement of the total freight accounted for in the month of October in the auditor's revenue accounts, assuming that

the difference between the freight that moved on local trains as ascertained by them from wheel reports and the entire volume as reflected by the auditor's accounts showed the freight transported on through trains, although it was shown that the auditor's books did not reflect the dates on which freight, and especially interstate freight, moved on the line of railroad in the State of Arkansas, the dates shown on the entries being those on which the freight was received, or delivered to the owner or connecting carrier, which, as to trans-state shipments, occurred altogether outside of the State, and as to interstate shipments beginning or ending in the State, occurred outside the State either at the beginning or the end of the shipment, and which varied very greatly from the time the freight moved through, into and out of the State. It was also shown that the movement of state and interstate freight on local and through trains, respectively, during said month, was abnormal, owing to the fact that there was, during that time, such a congestion of freight in the yards of the railroad company as to disturb the usual and normal loading on the two classes of trains, and to cause a much larger quantity and proportion of interstate freight than was usual and customary to be transported on local trains, by utilizing the local train to its full capacity regardless of its normal functions. After ascertaining the total amount of state and interstate freight carried on each of the two classes of trains during the month and the per cent thereof to the total freight movement for the month, in the manner shown, in ton miles, they applied the per cents to the total ton miles

of state and interstate freight handled during the entire period of six months covering the last half of the year, and divided it between the two classes of service on that basis, and then divided the train cost between state and interstate business in proportion to the volume of traffic of each kind handled in each class of service, on the assumption that the same conditions that existed during the month of October were in existence throughout the six months' period, which was clearly shown, by the evidence, not to be the case.

The court adopted the State's theory of dividing the expense of operation to a large extent, making modifications in the details thereof in accordance with the testimony, and, in that manner arrived at the findings of fact in regard to the net earnings and the return upon the investment, and reached a result so nearly approximating the revenue basis, with 50 per cent added for extra cost, as to make practically no change in the net results as shown by the railroads' exhibits.

It found that the gross earnings of the St. Louis, Iron Mountain & Southern Railway Company, during the six months' period, were \$1,726,578.86, the cost of conducting traffic during the same period was \$1,688,558.93, the net earnings were \$38,020.03. The value of the property apportioned to intrastate traffic was \$5,158,266.56, making the net earnings a little under three-fourths of one per cent; that the earnings of the St. Louis Southwestern Railway were, during the same period, \$466,476.19, the cost of conducting state traffic was \$429,221.07, the net earnings were

\$37,255.12; the value of the property apportioned to intrastate traffic was \$1,430,321.00, making the net earnings 2.6 per cent on the investment.

A lengthy opinion was filed containing many findings of law and fact on the various questions presented, which is contained in the printed record, but for the convenience of the members of the court we file separate copies of the opinion. The net earnings of intrastate business on the bases of division of expense submitted by the parties and that used by the Court are contained in an appendix at the end of the brief.

INTERFERENCE WITH INTERSTATE COMMERCE.

This question has been very fully presented in the briefs filed in other cases now before the court, which will be under consideration at the same time as these cases. For that reason, and because the decrees in these cases are based upon findings and rulings on other questions, we do not deem it necessary to discuss the question in its legal aspect in this brief, and will only present such views and considerations as grow out of the evidence and are peculiar to these cases.

The following facts are established by the evidence:

Many of the rates prescribed by the State Commission do, and were, at the time they were put in force, intended, to influence and control interstate rates. Judge J. G. Wallace, a very intelligent man, was chairman of the Commission in 1900, at the time the first tariff was prepared and promulgated by the Commission. He testified that in practice interstate rates were made on the basis of a combination of the local rates, and as a rule could not be higher than the combined local rates. As an instance he referred to the fact that prior to the promulgation of the Commission's tariff, the St. Louis & San Francisco Railroad Company, which had a direct line running from Fort Smith to St. Louis, had put in interstate rates between points in Missouri and North Arkansas that were more favorable than the local rates within the latter State, and under which the jobbers at Fort Smith could not compete with commercial centers in Missouri. The effect of that tariff was to divert the trade

of that section to Missouri points. The effect of the tariff promulgated by the Commission was to reverse the order of things and transfer the trade to Fort Smith, which forced the Frisco to lower its rates from St. Louis and other interstate points in Missouri in order that the jobbers of that State might compete with those at Fort Smith. The same conditions existed in other parts of the State and all through on long lines of railroad. (R. 889, 897.)

J. E. Hampton, who was a member of the Commission after Judge Wallace retired, and was, for a time, chairman, testified to the same effect. He referred to an instance in which the intrastate rate on sugar from Helena to all points in the State was reduced from 15 to 13 cents at the instance of jobbers at Texarkana, for the purpose of forcing down the interstate rate from New Orleans to that place. The interstate rate was 25 cents per hundred pounds. The river rate from New Orleans to Helena was 10 cents, the maximum rate from Helena to any point in the State was reduced from 15 to 13 cents, making the rate via Helena 23 cents, and forcing a corresponding reduction in the interstate rate. (R. 804, 805.)

C. E. Perkins, the General Freight Agent of the Missouri Pacific System, of which the St. Louis, Iron Mountain & Southern is a part, testified that when the intrastate rates in Arkansas were advanced it produced a similar advance in the interstate rates. He cited the condition at Memphis, to which we will refer later, and stated that the raising of the Memphis rates practically affects all the interstate rates into

the State of Arkansas; that Cairo and St. Louis rates would have to be advanced differentially over Memphis; that they were large distributing centers, and it was necessary to preserve a parity in the rates in order to allow the free distribution of business. That the interstate rates from St. Louis into Arkansas and Texas were factors in determining interstate rates from practically all parts of the country into that territory; that it affected Kansas City, Chicago, Pittsburg, and many other points mentioned by him, and when the rate from Memphis was changed, on account of the changes which were made in the intrastate rates in the State of Arkansas, it operated practically to change the entire rate adjustment affecting interstate rates to and from the State. This condition was not confined to the State of Arkansas, but applied practically to all States. As an example, he mentioned an instance in which the intrastate rates in Kansas on grain were reduced, and the reduction effected a change in every rate on grain carried from that State to points in other states. He further testified that the state adjustment fixes the rates from points of origin in Kansas to the Missouri River, the rates to the Mississippi River and Chicago, and that section are made practically on a combination of locals through to the Mississippi River, and the fixing of those rates fixes the rates to all points east and to seaboard territory; and in a similar way the rates from Kansas to Louisiana, Texas, and Arkansas were all affected by the change in the intrastate rates in the former State, and so, by changing one of the factors you have changed all your interstate rates. He testified that the relation of interstate and

intrastate rates is recognized by the Interstate Commerce Commission (Rule 56-B, p. 61, of "Administrative Rules"), in which it is said to be the policy of the Commission "to consider the through rate of fare which is higher than the sum of the locals between the same points as *prima facie* unreasonable, and the burden of proof will be upon the carrier to justify such higher rate or through fare." (This rule has since been enacted into a law. Act of Congress June 18, 1910.) He says: "There is a constant pressure on the part of shippers at all times to keep the two classes of rates in relative adjustment, and many complaints are made to the Interstate Commerce Commission, and we know that we could not disregard the rule because of the power of the Interstate Commerce Commission." (R. 598-603.)

Again, in his testimony on rebuttal, he testified that to stations in Arkansas in the vicinity of Arkansas City and Helena, the rates from Memphis are based on full combination of locals to and from Arkansas City and Helena, using the Commission's schedule from those points, and the St. Louis rates are adjusted differentially higher; conditions affecting the business force them to do so. As an illustration, he referred to the fact that the rates from Memphis to Helena are on a low scale on account of river competition; that a disregard of the state rates would force shipments into Helena and Arkansas City by river, or by the Illinois Central Railroad, which has a direct line to Memphis, from which points they would be reshipped into the interior of the State. (R. 1630.)

J. D. Watson, the Assistant General Freight Agent of the St. Louis Southwestern Railway, testified to the same effect. (R. 1672, 1673, 1674.)

The following exhibit (No. 50), filed by him shows the differentials in the rates on all classes between Memphis and Cairo, Memphis and St. Louis and Memphis and Kansas City:

CLASS RATES TO LITTLE ROCK AND PINE BLUFF.

From	1	2	3	4	5	A	B	C	D	E
Memphis ...	70	60	45	32	24	25	20	17	14	10
Cairo	90	75	55	40	29	30	25	21	17	12
Difference ..	20	15	10	8	5	5	5	4	3	2
Memphis ...	70	60	45	32	24	25	20	17	14	10
St. Louis... .	1.00	85	65	45	34	35	30	25	20	15
Difference ..	30	25	20	13	10	10	10	8	6	5
Memphis ...	70	60	45	32	24	25	20	17	14	10
Kansas City. .	1.10	90	75	55	43	45	40	30	27	24
Difference ..	40	30	30	23	19	20	20	13	13	14

*Tariff No. 1010.

The differentials shown on the exhibit were used in making the rates to Little Rock and Pine Bluff, and points based thereon, and the rates to points beyond Little Rock and Pine Bluff were adjusted either by combination or differential over the Little Rock rates for the purpose of preserving the length of haul both as to origin and destination as a controlling factor in making the rates. He mentioned in his testimony the rate adjustments in the territory south of Pine Bluff as an illustration of the effect of a change in intrastate on interstate rates. The St. Louis Southwestern Railroad Company, he stated, had no line

of its own into Memphis, and the rate from West Memphis to its territory in the interior did not force them to apply the West Memphis rate, but the reduction of the rates from Pine Bluff made it necessary for his company to reduce the rates from Memphis to the stations south of that point, which was shown by exhibit (No. 51), filed by him. Column No. 1 of the exhibit shows the rates that were in effect from Memphis to the stations named at and prior to the time the standard freight distance tariff promulgated by the Commission in 1900 was made effective. Column No. 2 shows the rates as they were readjusted to the Commission basis; column No. 3 shows the reductions in the interstate rates resulting from the readjustment.

See exhibit 51, following page 2432 of the record.

The Commission tariff contained a larger list of commodity rates than was used in the interstate adjustments. Referring to that, Mr. Watson testified that that change forced a corresponding change in the classifications in the interstate schedules. (R. 1672-1674.)

See testimony of B. M. Flippin, the Freight Traffic Manager of the Missouri Pacific System. (R. 239, 240.)

Fort Smith is situated on the south bank of the Arkansas River; Van Buren is five miles below it on the opposite side, both stations being in the State of Arkansas. The main line of the St. Louis, Iron Mountain & Southern Railway extends from Little Rock, in the State of Arkansas, to

Coffeyville, in the State of Kansas, along the north bank of the Arkansas River in the States of Arkansas and Oklahoma. Trains going eastward in the direction of Little Rock from Fort Smith cross the river on a bridge into Oklahoma, and thence turn eastward into Arkansas. The run in Oklahoma is four miles. The traffic is interstate, and is so treated in the statistics in this case, but is treated as state traffic, so far as concerns the rates, and the State Commission rates are applied to it. All traffic to and from Van Buren, in the State of Arkansas, is intrastate traffic, and is regulated by the state tariff. All traffic north of Fort Smith, on the St. Louis & San Francisco Railroad, to the Missouri line is intrastate, and the rates are regulated by the State Commission. Fayetteville is a city in the State of Arkansas, 63 miles north of Fort Smith, and one of the principal stations on the St. Louis & San Francisco Railroad in the State. Rogers is the next important station, and is 82 miles north of Fort Smith. Magazine and Danville are important stations on the Chicago, Rock Island & Pacific Railway, which connects with the St. Louis & San Francisco Railway at Mansfield, a station on both lines 32 miles from Fort Smith. They are distant, respectively, 58 and 83 miles from Fort Smith, and all shipments originating at Fort Smith are billed and treated as a continuous haul to those and other points on the Chicago, Rock Island & Pacific Railway. Clarksville and Russellville are important stations on the main line of the St. Louis, Iron Mountain & Southern Railway, 63 and 90 miles, respectively, east of Fort

Smith. All shipments out of Fort Smith to those points and all other points on that line of road are interstate traffic. All shipments to all points, including those mentioned on other lines of road referred to, are intrastate traffic. Paris, in Logan county, Arkansas, is the eastern terminus of the Arkansas Central Railroad. Fort Smith is its western terminus. The road is 46 miles in length, is wholly within the State and under the control of the State Commission. If the intrastate rates were not applied to the traffic out of Fort Smith on the St. Louis, Iron Mountain & Southern Railway, and different (interstate) rates were applied, it would result in a discrimination between localities not only as to the points mentioned, but as to all other points on the several lines of railroad equi-distant from Fort Smith.

The city of Memphis is the principal eastern gateway for the business of Arkansas and Oklahoma. Nearly all of the principal lines of railway in the State, either directly or through their connections, enter Memphis and conduct traffic which passes through that gateway. The St. Louis, Iron Mountain & Southern Railway connects the city of Memphis with a very large part of the interior of the State of Arkansas through its main line and branches, extending westerly to and beyond Little Rock, and in a southerly direction to and beyond Helena, McGehee and Montrose, in the direction of New Orleans.

The main line of the Chicago, Rock Island & Pacific Railway extends westerly from Memphis into and beyond

Oklahoma, with branches radiating therefrom in the State of Arkansas. The St. Louis Southwestern Railway through trackage arrangements with other lines of road has an entrance into Memphis connecting its main line, which extends through Southeastern Arkansas, by way of Pine Bluff and Camden, to and beyond the city of Texarkana, with branches to Shreveport, Louisiana, Little Rock, Arkansas, and other points. A considerable amount of business also enters the State from Helena, a city on the west bank of the Mississippi River, in the State of Arkansas, and sixty miles south of Memphis, via the Illinois Central Railway, which enters that city from the east. The St. Louis, Iron Mountain & Southern Railway and the Missouri & North Arkansas Railway, which extends from Helena northwestwardly, to the cities of Joplin and Kansas City, Missouri, conduct a large traffic, both state and interstate, into and out of that gateway. These lines entering the State at Memphis and Helena and radiating in various directions, constitute a network that covers all of Eastern Arkansas.

The cities of Texarkana, in Arkansas and Texas, are situated, respectively, on the south boundary of the State of Arkansas and the east boundary of the State of Texas. The State line divides the two cities. It is the gateway for all traffic handled by the appellees through the State of Arkansas into Texas and a large territory beyond, and of a large amount of traffic into the State of Louisiana, the lines of many of the principal railroads in that section on each side of the State line terminating at that point. The St.

Louis, Iron Mountain & Southern Railway, and the St. Louis Southwestern Railway terminate there, and the lines of the Kansas City Southern Railway, coming from the north, through the State of Arkansas, passes into Texas at that point. The Texas & Pacific, traversing the States of Texas and Louisiana from the south, west, and east, also terminate there. A very large amount of interstate traffic and of intrastate traffic is conducted over the lines of the three railways entering Texarkana in the State of Arkansas from the north, and a large amount of traffic is also brought into the State and conducted within the State on branches radiating from the main lines of those roads.

The St. Louis, Iron Mountain & Southern, and the St. Louis Southwestern Railways, each, enter the city of Little Rock from the south, and are competing lines between Texarkana and that city. Those lines and the Chicago, Rock Island & Pacific are competing lines between Memphis and the city of Little Rock. It will thus be seen that a very large amount of interstate freight traffic is necessarily affected and the rates for transporting the same to a large extent controlled by the rates prescribed by the State Railroad Commission.

C. L. Stone, the Passenger Traffic Manager of the Missouri Pacific System and the St. Louis, Iron Mountain & Southern Railway, testified as to the effect of the State Commission passenger rates upon the interstate passenger rates. He testified that immediately after the change of the interstate passenger rates from three to two cents per

mile, under the act of 1907, a similar rate was applied to interstate passenger traffic, and upon the restoration of the three-cent rate, subsequent to the granting of the injunction in these cases, it was applied to both classes of service. He stated that it was impracticable, if not impossible, to reduce the passenger fare in the State from three to two cents per mile and not change the interstate rates correspondingly. He filed a map (Exhibit 24), which shows the lines of the St. Louis, Iron Mountain & Southern Railway and Missouri Pacific System, of which it is a part, in the States of Arkansas, Missouri, Kansas, Colorado, Nebraska, Oklahoma and Louisiana, an examination of which will demonstrate how difficult it would be to put and keep in force different rates for the transportation of interstate passengers from those applied to local passengers in the several States traversed by these lines of road. Twenty-five copies of this map have been filed to be used at this hearing.

Mr. Stone further testified in this connection:

"The rate per mile in the State of Arkansas was reduced by legislative action from three cents to two cents per mile, on April 9, 1907. This had the effect of making the following reductions between border points in the State of Arkansas:

"Between Moark, on the north, and Texarkana, on the south, the fare was reduced from \$9.11 to \$6.08; making a reduction of \$3.03 in the intrastate fare.

"Between Bridge Junction, on the east, and Fort Smith, on the west, the fare was reduced from \$8.60 to \$5.73; or a reduction of \$2.87.

"Between Bridge Junction, on the east, and Texarkana, on the southwest, the fare was reduced from \$8.25 to \$5.50; or a reduction of \$2.75.

"Between Bridge Junction, on the east, and Mammoth Spring, on the north, the fare was reduced from \$4.17 to \$2.80; or a net reduction of \$1.37.

"These reductions had the effect of reducing interstate rates between the territory as outlined on this map, between the points located in the territory marked '1' and the points located in the territory marked '8' (that is Mexico); a reduction of the local fares between Moark and Texarkana made an average reduction of from \$2.25 to \$3.03 on each ticket passing over the lines of the St. Louis, Iron Mountain & Southern Railway between Moark and Texarkana.

"The territory marked '8' includes Texas and Mexico (it is marked in blue on the map).

"Between points located in territory marked '3', '4' and '5' on the map, that is routed through the Memphis gateway, the reduction of the fare on the Arkansas lines would average from \$1.90 to \$2.87 for each passenger carried across the State of Arkansas.

"Between the points shown in the territories marked '2', '3', and '4' on the east and the territory marked '8' on the southwest, when routed via Memphis and Texarkana, the average reduction in the revenue accruing to the Arkansas lines was from \$1.75 to \$2.75 for each passenger carried between Memphis and Texarkana.

"Between the territory marked '4' and '5' on the southeast, and the territory marked '6' on the northwest, the average reduction brought about by the change in the fares in the State of Arkansas, was from \$1 to \$1.37 on each ticket.

"In other words, to make this perfectly plain, all of this coloring (indicating map) shows the effect that the reduction in the local passenger fares in the State of Arkansas from three cents to two cents per mile, had on interstate traffic.

"We cannot reduce the passenger fare in Arkansas from three cents to two cents per mile and not change our interstate rates. It is impracticable and almost an impossibility." (R. 266, 270, 271.)

The court below made the following finding of facts on this subject:

"That intrastate tariffs bear certain relations to, and to some extent control interstate rates cannot be doubted. The evidence in this case establishes that fact conclusively, and, even in the absence of such evidence, the court would be justified to take judicial notice of it. No better illustration is needed than the facts and conclusions of law in *Gulf, C. & S. F. Railway Co. v. Texas*, 204 U. S. 403, 413. And this seems to be the rule adopted by the Interstate Commerce Commission since the decision in the *Gulf Railroad* case. *Ambrey Semple v. Galveston, etc., Ry. Co.*, 17 I. C. C. 267, and Rule 56-B of Administrative Rules. Although the Texas case was one involving freight only, the same principle applies to passenger rates. In fact, it is more apparent in the latter than in the former. Even in the absence of a rule to that effect by the Interstate Commerce Commission, or of decisions of the courts, if the States of Arkansas, Texas, and Missouri, each, enact a two-cent rate fare, it would be folly for a carrier to attempt to charge a higher rate for interstate or trans-state passengers in those States, for passengers would purchase tickets to the State line of each State at the reduced local rate and thus defeat the higher interstate rates, although the state rates are, by the statutes of these States, limited to intra-state transportation solely."

Judge Sanborn, in discussing the effect of the Minnesota law on the rates of cities located in the same vicinity, said:

"Duluth and Superior, Grand Forks and East Grand Forks, Fargo and Moorehead, and Wahpeton and Breckinridge are so situated that each pair must be considered for the purpose of rate-making, as one locality. Both as a practical matter of the operation of a railroad, and in

order that undue and unjust discrimination as between the members of any pair may be avoided, each city of each pair must have rates equal to those accorded to the other city. If different rates, a different classification, or a different basis of rates be lawfully prescribed by one regulating power in or out of one city of any pair to those prescribed by another regulating power in or out of the other city of the pair, the carriers serving them both must, in order to avoid undue and unjust discrimination in fact, as between them, as well as to preserve their own power to transact business with each of them, adopt for each city the lower rates, or basis of rates, or classification, prescribed for either city." 184 Fed. 791.

This view may be applied to the twin cities of Texarkana, in Texas and Arkansas. If the railroads entering that city from the State of Arkansas should not apply the state rates to traffic from Texarkana, Texas, to points in the State of Arkansas, a condition would be created similar to that described by Judge Sanborn, and which would result in a discrimination against that city. The same is true of shipments from stations in Arkansas to Texarkana, Texas. Two rates would obtain on every shipment from and to stations in Arkansas to the two cities. Judge Sanborn says, at page 786:

"Whether discrimination, in fact, exists between rates is determined by comparison of the rates involved. If conditions are substantially the same, rates for like distances should be the same, and, if not the same, undue and unjust discrimination in fact will exist."

Again, at page 788:

"If the companies shall be compelled to maintain within Minnesota the rates prescribed by chapter 232, they will be compelled to reduce the basis of their interstate rates between Eastern Montana and North Dakota points

and Minnesota points, and between Eastern Montana, North Dakota and Minnesota points and Superior to a substantial parity with the basis prescribed by chapter 232, in order to avoid undue and unjust prejudice and disadvantage, in fact, against shippers and localities transacting the interstate business, as well as in order to protect the interstate business of carriers against serious impairment."

We think these statements by the court apply to the conditions existing at Fort Smith. All business from Fort Smith on the lines of the St. Louis, Iron Mountain & Southern Railway into the interior of the State of Arkansas is interstate. Other railroads radiate from that center to a large territory in the State northerly, southerly and westerly. In order to preserve a parity between shippers and localities on the lines of the Iron Mountain Railroad out of Fort Smith into the State with other localities penetrated by other lines of railroad, that company is forced to apply the State Commission rates to all business out of Fort Smith into the State.

Memphis is a distributing center for the State of Arkansas. West Memphis is situated on the opposite, west, bank of the Mississippi River, and is accessible to steam-boat traffic on the river. All shipments from Memphis into the State of Arkansas take the Arkansas Commission rates, subject to a small differential for bridge toll. The railroads are forced to apply those rates by the laws of trade and insurmountable conditions affecting traffic. Speaking of a similar condition, Judge Sanborn said, page 793:

"They say that, while the reduction of the local fares and rates may induce the companies to reduce their inter-

state rates and fares across the borders of the State to a parity with the local rates, this is the voluntary act of the companies, not directly required by the laws and orders. There are, however, known and inexorable laws of commerce, and one of them is that transported articles will move at the lowest available rates. * * * There is nothing voluntary on the part of the companies in the loss or burden imposed upon them by these reductions. That they must suffer whether they reduce their interstate rates or maintain them and permit the transformation of their affected interstate commerce into intrastate commerce by rebilling and local contracts so that it can pass at the sums of the locals. * * *

"Moreover, the acts and orders making these intrastate reductions necessarily operate to discriminate against interstate commerce and the right of the companies to carry it on, and in that way constitute a direct burden upon such commerce. Mr. Justice White said in the Pullman Company's case, 216 U. S., at page 65, 30 Sup. Ct., at page 236 (54 L. Ed. 378), that, though a power exerted by a State may not abstractly impose a direct burden on interstate commerce, yet such exertion will be a direct burden upon such commerce if the power as exercised operates a discrimination against that commerce, or, what is equivalent thereto, discriminates against the right to carry it on. If the companies exercised their right to maintain, and did maintain, their former interstate rates upon that portion of their interstate commerce affected by the local Minnesota rates, they lost to local commerce that interstate commerce, because it passed by rebilling and local contracts at the sums of the locals. This necessary effect of the local maximum rates was a direct discrimination against interstate commerce and the right to conduct it, and, hence, a direct burden upon that commerce. If, on the other hand, to avoid this discrimination, the companies reduce their rates, that reduction was a like direct burden, and no course was open to them whereby they could exercise their constitutional right to conduct their interstate commerce free from the direct regulation thereof, effected by these acts and orders."

Again, in speaking on the subject of the indirect effect of state regulation upon interstate commerce, the court say:

"Counsel for the defendants argue, however, that this radical discrimination is not forbidden by the interstate commerce law because it is a discrimination wrought, not by an undue difference between intrastate rates, of which they say the State has exclusive jurisdiction, nor by an undue difference between interstate rates of which, they admit, the Nation has exclusive jurisdiction, but by an undue difference between intrastate rates and interstate rates, and they contend that, over the discrimination thus wrought, neither State nor Nation has any power. The argument, however, again disregards the broad and fundamental difference between the power of the State over intrastate commerce and the power of the Nation over interstate commerce. The State may regulate its intrastate commerce so far, only, as the exercise of its power does not substantially burden or regulate or discriminate against interstate commerce, but no farther. A State may not prohibit or regulate discrimination between interstate and intrastate rates in such a way as substantially to burden or regulate interstate commerce, as, for instance, by the prohibition of a higher charge or rate for a short haul wholly within the State than for a long haul that includes the short haul and extends into another State, because such action burdens and regulates interstate commerce. Louisville & Nashville R. R. Co. v Eubank, 184 U. S. 27, 42, 43, 22 Sup. Ct. 277, 46 L. Ed. 416. By the same mark, because it is a direct regulation of interstate commerce, the Nation may regulate and prohibit discrimination wrought by an undue difference between interstate and intrastate rates, although such regulation or prohibition may also, to some extent, affect and regulate intrastate commerce. For, to the extent necessary completely and effectually to regulate interstate commerce, the Nation, by the Congress and its courts, may affect and regulate intrastate commerce." (Pages 794, 795.)

We submit that the statement made by the court in these cases that the facts found in the Minnesota case dif-

fer very materially from the evidence in these cases, is not warranted. In many respects, it is true, conditions differ in detail, but many of the conditions shown by the evidence to exist in these cases are covered by the principle announced in the case cited.

The court below, in speaking on this subject, said:

"If then the power to regulate carriers' rates rests upon the police power, which, under the decisions cited, is in fact coextensive with the governmental power of the State, it requires no extended argument to prove that a regulation or statute of a State enacted under that power is not void because it incidentally affects the commerce clause or any other provision of the National Constitution, especially, if it is not in conflict with any act of Congress on that subject, or when Congress has not seen proper to act upon that subject."

And, again:

"Another matter not to be overlooked is, if the State is without the power to regulate purely intrastate transportation because it affects interstate traffic indirectly, where is it vested? Congress is clearly without power to do so, and, of course, it cannot delegate to a commission a power it does not itself possess."

For the purpose of these cases, we submit that the suggestions of the court are answered by the recent opinion of this court in *Southern Railway Co. v. United States*, delivered on October 30, and not yet published. The case arose under the Safety Appliance Acts of Congress, which were passed largely for the protection of life and property, and, insofar as they applied to local trains operated within the State, affected matters within the State's police power. The court, through Van Devanter, J., in disposing of a

contention based on the view expressed by the court in the extracts, say:

"We come, then, to the question whether these acts are within the power of Congress under the commerce clause of the Constitution, considering that they are not confined to vehicles used in moving interstate traffic. * * * Is there such a close or direct relation or connection between the two classes of traffic, when moving over the same railroad, as to make it certain that the safety of the interstate traffic and those who are employed in its movement will be promoted in a real or substantial sense by applying the requirements of these acts to vehicles used in moving the traffic which is intrastate, as well as to those used in moving that which is interstate? If the answer to this question, as doubly stated, be in the affirmative, then the principal question must be answered in the same way. And this is so, not because Congress possesses any power to regulate intrastate commerce as such, but because its power to regulate interstate commerce is plenary and competently may be exerted to secure the safety of the persons and property transported therein, and of those who are employed in such transportation, no matter what may be the source of the dangers which threaten them. That is to say, it is no objection to such an exertion of this power that the dangers intended to be avoided arise, in whole or in part, out of matters connected with intrastate commerce."

If we understand the effect of this ruling it is a complete answer to the suggestions contained in the above extracts from the opinion of the court below.

In *M. & I. Coal Co. v. I. C. R. R. Co.*, 21 I. C. C. Rep. 39, the Interstate Commerce Commission held that under the Hepburn Act

"It is the duty of the carriers to so unite themselves that they will constitute one national system. They must establish through routes, keep these routes open and in operation, furnish the necessary facilities for transporta-

tion, make reasonable and proper rules of practice as between themselves and the shippers, and as between each other. And the full burden of this great obligation is in the first instance upon the carriers themselves.

"But the power to control and regulate railroad practices is vested in the Commission as between the carriers themselves, as well as the carriers and the public."

It is difficult to conceive how this vast power can be exercised consistently with the exercise of the power of regulation and control by the States as to intrastate traffic and operation, without producing a conflict that would impair the full measure of power assumed by the Federal Government and intended to be conferred on the Interstate Commerce Commission. (See *Traffic World*, Vol. 8, No. 25, Dec. 16, 1911).

PREMATURE BRINGING OF SUIT AND ACQUIESCENCE.

It is contended by counsel for the State that the plaintiffs should have applied to the Railroad Commission for relief before they brought suit to enjoin the rates.

This contention is based on the ruling in *Prentis v. Atlantic Coast Line*, 211 U. S. 210. The ruling in that case was based on the peculiar provisions of the Constitution of Virginia. The legislative action had not become final under the laws of Virginia at the time the suit was brought. It was still at the legislative stage, and the rates complained of were in process of formation, and, for that reason, the court held that it was only a just recognition of the care with which the rights of the plaintiffs had been guarded that they should make sure that the State, in its *final legislative action*, would not respect them. *Willcox v. Consolidated Gas Co.*, 212 U. S. 19, 40; *A., T. & S. F. Ry. v. Love*, 174 Fed. 59, 62.

Here, the action of the State, through its administrative board, had become complete and final. It was taken after hearing and over the objection of the parties affected. There was no reason to suppose, and the railroads were not required to assume, that they would reverse their action. The Commission had no power to change the passenger rate; the legislative act of 1907 left it no discretion in the matter. It merely registered the will of the Legislature in the order promulgated in regard to passenger rates. (See opinion of the Circuit Court in this case, p. 24.)

It is also claimed that the railroads delayed bringing suits for a length of time that implies acquiescence.

Mr. Hampton, the chairman of the Commission, testified that the railroads appeared before the Commission when invited to do so and objected to the changes, and that the reductions were made over their protest (R. 802). All the traffic men of the railroads testified to the same effect. He also testified that about seventy-five changes were made in rates during the time he was a member of the Commission, and all of them were reductions. Besides this, the Commission made many changes in the classification by enlarging the list of commodities which carried a lower rate and operated as a reduction of the rates. They changed the minimum carload prescribed in the Western Classification, which was used by the railroads, materially, making many reductions in that respect which effected a reduction in the revenue. The reduction in passenger rates made by the act of the Legislature of 1907, produced a very material reduction in the revenues of the roads.

The cost of material and labor employed in the maintenance and operation of railroads was materially increased during the time the Commission rates were in force, and the expense of operation was constantly increasing by reason of statutory requirements involving large outlay; the installation and maintenance of new equipment and appliances, the employment of additional employes by shortening the hours of labor of certain classes, the increase in the number of employes engaged in certain departments of

the service—for instance, by the statute requiring three brakemen on certain classes of trains. These changes are set out in the testimony of C. J. McPherson, who was Assistant to the General Manager of the Missouri Pacific System and the St. Louis, Iron Mountain & Southern Railway Company, to which we will now call attention at some length, more on account of its general importance and bearing on other questions that may arise hereafter, than on account of the particular matter we are now discussing. It shows conclusively that the condition of the railroads in the State of Arkansas had continually grown worse until they had reached a point where the revenue produced by the rates in force was entirely inadequate to meet ordinary operating expenses and afford a reasonable return to the owners of the property. As pointed out by the circuit court in the opinion in this case, acquiescence could have no greater effect in a case of this character than to raise the presumption that the rates are reasonable if the conditions are unchanged. It would not be conclusive nor produce an estoppel. None of the elements of estoppel arise. Leaving out all other questions, the passenger rate statute had only recently gone into effect at the time the suits were brought, and that alone produced such a serious diminution in the revenues of the railroads as to justify legal proceedings. But there has, in fact, been no acquiescence. All the testimony on the subject in the record shows that the railroads were at all times objecting, protesting, and doing all they could to prevent the reductions complained of.

(See opinion of the Circuit Court in these cases, p. 26, and the cases cited.) Love v. A., T. & S. F. Ry. Co., 185 F. 332.

FOR A PERIOD OF TEN YEARS BEFORE THE INSTITUTION OF THESE SUITS, THERE HAD BEEN A CONTINUOUS INCREASE IN THE EXPENSE INCIDENT TO THE OPERATION OF RAILROADS IN THE STATE OF ARKANSAS, GROWING OUT OF THE INCREASE IN THE COST OF LABOR AND OF ALL MATERIAL USED IN MAINTENANCE AND OPERATION, AND THE LARGE BURDENS IMPOSED ON RAILROADS IN COMPLYING WITH THE REQUIREMENTS OF THE RAILROAD COMMISSION AND STATUTORY REGULATIONS AND REQUIREMENTS AND A LARGE INCREASE IN ALL CLASSES OF TAXES.

Mr. McPherson testified that the cost of operation had increased enormously since 1897, caused by various forces, the principal of which is (1) the increase in wages paid to all classes of railroad employes, (2) the increased cost of material, (3) the increase due to compliance with various laws, (4) the increase in taxation (R. 287). At page 286, he gave a detailed statement of the increase in wages of a large number of employes, and filed exhibit 27, showing the average daily rates of pay for classes of service per day and per 100 miles (in freight service) during various years, from, and including, 1897 to 1909. The increase ranges from 13.2 per cent to 61.9 per cent.

The amount paid to the classes of employes referred to in the exhibit, and in his testimony, for the fiscal year ending June 30, 1908, was \$11,196,767.00. He testified that had the wage scale prevailing prior to 1902 prevailed in the fiscal year of 1908, the amount would have been \$7,803,951, showing an increase in wages, alone, of the ten classes of employes enumerated, to be \$3,392,815 in the year 1908. These figures apply to the Missouri Pacific System, but of the increase Arkansas would bear more than her relative proportion because of greater volume of business, density of traffic, and the Three Brakemen Law. The increase had extendeded to all classes of employes as well as those enumerated, particularly since 1902. The amount in the unclassified service could not be exactly stated prior to 1907, but in that year, because of the increased cost of living, an advance in wages was made to many persons in the unclassified service, which, including the classified service previously referred to, averaged 6.7 per cent of the entire labor roll for the fiscal year, 1908. The ratio of increase in wages did not show the increased cost of labor, owing to changes in duties imposed upon certain classes of employes—for instance, firemen, who formerly wiped their engines above the running board had been relieved of that duty since April 1, 1907, making it necessary for others to perform that service at an approximate annual cost of \$60,000. Switchmen formerly worked twelve hours a day as a unit of the day's work; they now receive 61.9 per cent increase in the wages and their hours of service have been reduced to ten as a unit of a day's

work. Since 1890 the classification of railway employees has been sharply defined, and has resulted in a gradual increase in the number of employes. The increased cost brought about by advances in the price of materials entering into railroad construction, operation and maintenance was greater than that brought about by the advance in labor cost. One of the largest items in maintenance-of-way and structures is crossties, the cost of which has increased from 108 to 129 per cent over that of 1897. Up to 1900, the company paid 24 cents per tie for first-class crossties in the State of Arkansas. He then gives the increase from that time to 1908, the cost being 55 cents per tie in the latter year, or an increase of 129 per cent, north of the Arkansas River, in Arkansas, and 50 cents per tie, or 108 per cent increase south of the river. That item alone has increased the cost \$250,000 a year. He made a comparison of prices paid in 1898 with prices paid during the current months of the year 1909, which is condensed in exhibit 28, filed by him, and shows an increase in prices ranging from 7.7 per cent to 147.7 per cent in articles that enter largely into operation and maintenance. He filed a statement compiled from bulletin No. 75, issued by the Department of Commerce and Labor in March, 1908, which he testified exhibits the range in prices of some material entering into railway maintenance and operation, from 1897 to 1907. This is made exhibit 29 to his deposition, enumerates different articles from those contained in exhibit 28, and shows an increase ranging from 15 per cent to 171.4 per cent in prices between the years mentioned. He referred to and

enumerated certain statutory enactments which he testified had largely augmented the cost of operation in the State of Arkansas. Among them was the installation of headlights on locomotives, the Full Passenger Crew Law, the Three Brakemen Law, and other enactments. He showed that the total expense incident to complying with these laws in the current volume of business, under current conditions, was \$217,987 per annum. He testified that the railway company, that is, the Missouri Pacific System, including the St. Louis, Iron Mountain & Southern, had expended \$4,748,231 to equip its locomotives with air-pumps and driver-brakes and its freight cars with automatic couplers and air-brakes, and that the cost of their maintenance was \$250,000 per annum. The increases referred to in his testimony, except where otherwise mentioned, are on the St. Louis, Iron Mountain & Southern, alone. He states that the increase per mile for taxes during the nine years was 96.6 per cent, growing largely out of the increase in the assessment of the value of the property. Another source of expense in first cost and maintenance is the erection of stations under laws passed by the Legislature and orders of the Railroad Commission. Many stations have been erected in that way which would not otherwise have been established, not only the cost of erection, but the cost of maintenance of the structures, and of agents and operators at such stations, involve material expense. He filed a graphic chart as exhibit 30, showing comparative prices of material and labor during the period covered by his testimony and the ton mile return for service in freight traffic, that is, the

revenue per ton mile. The chart shows that there was a decrease of 12 per cent in the revenue per ton mile from 1897 to 1909. The chart is explained and its meaning pointed out in the testimony of the witness at page 296 and the following pages. It shows that the producing power of the railway had decreased, relatively, for the volume of business done, approximately 12 per cent. He further testified that the conditions described in his testimony and shown on the chart, applied generally to railroads operated in the State. His testimony further shows that in 1906 all the organizations connected with train service formulated demands on railroads west of the Mississippi River and northwest from Chicago, for radical changes in the labor status. It included demands for reduction in the unit time of labor to eight hours, and also for an increase in the rate of wages. A compromise was effected between the railroads and the labor organization, which resulted in an increase in wages amounting, for engineers and firemen to 8.2 per cent, and of all trainmen to 10.2 per cent. The wages of the yard men had been increased in the preceding November 13.4 per cent. These increases, as to trainmen, took effect on April 1, 1907. In the meantime, demand was made and an increase in wages granted to all the crafts —the shopmen, boiler-makers, machinists, blacksmiths, etc., as follows:

Machinists and boiler-makers.....	8.8 per cent
Boiler-maker's helpers.....	8.3 per cent
Blacksmiths and their helpers.....	9.7 per cent
Car department employes.....	6.1 per cent
Tinners, coppersmiths, and pipe-fitters	4.8 per cent,

and, later in the year, it was also necessary to increase the wages of unskilled labor, because of the increased cost of living. The total increases that were made, including crafts, he testified, affected 19,811 out of a total of 37,000 employees in the service of the Missouri Pacific System, and amounted, during the six months' period, in the State of Arkansas, to \$215,204, or 6.7 per cent of the entire labor rolls. 65.9 per cent of the entire operating expenses in the State is for labor, and it was on this proportion of operating expenses that the increase of 6.7 per cent was made during the early part of the year 1907. He introduced two extracts from bulletin No. 75 of the Department of Commerce and Labor, issued in March, 1908, showing a very material increase in the cost of material used in operation in the years 1906 and 1907. This enumeration is contained at pages 299, 300, of the record. He testified that the tendency of prices of labor and material used in maintenance and equipment, judging from his observation during the last ten years, is upward; that increases in wages made by a railroad company are permanent, and there is no probability of any abatement or recession in the price of labor. His testimony on this subject will be found in the record, beginning at pages 286-300.

He was asked what the railroad company had done to improve efficiency in operation, beginning with the year 1900. His answer to that question, in full, was as follows:

"The railway company has made extensive grade revisions and changes in its alignment and purchased heavier

equipment. That is, locomotives of greater tractive power, and cars of larger capacity, and made other improvements to increase the efficiency of its train service. The grade between Moark, near the State line between Missouri and Arkansas, a distance of 307 miles, is now six-tenths of one per cent, and this involved the reduction of the maximum grades between Moark and Little Rock, 35 feet to the mile, and between Little Rock and Texarkana, 26 feet to the mile, these reductions bringing the maximum grade to 31 feet to the mile, or six-tenths of one per cent.

"Between Knobel and Helena, a distance of 140 miles, the maximum grade was reduced from 91 feet to the mile, southbound, to 62 feet to the mile. And, northbound to 83 feet, involving the cutting down of the maximum grade 28 feet to the mile, southbound, and 8 feet, northbound.

"Between East Little Rock and Pine Bluff, a distance of 42 miles, the maximum grade has been reduced from 52 feet to the mile to 26 feet, which was a maximum grade reduction of 26 feet to the mile, and leaves the present grade one-half of one per cent.

"Between Little Rock and Van Buren, a distance of 152 miles, the maximum grade, prior to the revision, was 85 feet to the mile, eastbound, and 81 feet to the mile, westbound. These grades have both been reduced to 31 feet to the mile, or six-tenths of one per cent. This involved a reduction of maximum grade 54 feet to the mile, eastbound, and 50 feet to the mile, westbound.

"This, with other work in the way of improvements, improving the efficiency of the property, caused an expenditure of \$8,684,411.00 for the eight fiscal years, 1901 to 1908.

"It does not embrace some of the expenses, however, as the figures chargeable to 1899 and the first half of 1900 were not accessible at the time that this compilation was prepared.

"This reduction of grade increased the efficiency of the railway in its tonnage road haul.

"As a further improvement, the company purchased, during the period mentioned, 323 locomotives of large tractive power, and 6,680 freight cars of large capacity, at a cost of \$9,660,372.00.

"This heavier power likewise contributed to increasing the average tonnage road haul and thus increased the efficiency of the service.

"This increased efficiency of operation, however, has been overcome and far outrun by the forces working against it. That is, the increased rate of wages and the increased cost of material, the burdens imposed by legislation and the increase in taxes." (R. 331, 332.)

His statement that the increase in efficiency is overcome and far outrun by the forces working against it, was not contradicted, and is corroborated by a comparison of the percentage of expenses to revenue during the period covered, which shows that the net earnings decreased, and this decrease was unquestionably traceable to the fact that the cost of operation, growing out of the increase in the expense of operation and cost of material, outran and was greater in proportion than the effect of improvement in efficiency. The net earnings are the result of all the forces that were at work during this period,—increased efficiency on one side and the increased cost of everything that enters into railroad operation on the other. We know of no higher test for the purpose of demonstrating the correctness of Mr. McPherson's views.

Mr. McPherson had been engaged in railroad operation for thirty-two years at the time he testified. His service covered a vast field, ranging from telegraph operator,

station agent, general yard master, master of transportation, chief clerk to the general manager, and assistant to the general manager. He was more closely in touch with the conditions in regard to which he was examined than any official connected with the Missouri Pacific System, and far more than any witness who testified in the case on either side. His duties required him to deal with and study economies in operation, and he was peculiarly well qualified to give information upon those matters.

On cross-examination, Mr. McPherson testified that the graphic chart introduced by him (Exhibit 30) did not reflect the increased efficiency of locomotives, car capacity, etc., and was asked if it would reflect the actual conditions without that. He said it was not intended for that purpose; that it would be difficult for any graphic illustration to be made that would embody those elements. (R. 392.)

In response to a question on cross-examination, he stated that the purpose of the chart filed by him was to show the increasing trend of the cost of the articles the railway must buy, and the decrease in the trend of its purchasing power, and the fact that it did not show the increased efficiency of locomotives, cars, etc., did not impair its value for that purpose. (R. 394.)

He was then asked if the railroad secured any more efficiency for its purchasing power now than it had at the beginning of the period referred to by him. His answer was that it did not; that it is doubtful if the company today secures the labor efficiency that it formerly did, or gets the

same efficiency for its expenditures for labor that it formerly did. He stated, in answer to a cross-interrogatory, that the increased efficiency of locomotives measured by the average tons of revenue freight per ton mile in 1909, over 1900, is substantially 26 per cent; that with this increase of 26 per cent, there goes a heavier expenditure for maintenance. The maintenance of the present-day locomotive is very much greater than the average locomotive of 1900. The average increase of tractive power of locomotives as between 1902 and 1908, is substantially the same, 26 per cent. The increase in the average capacity of the cars is 43 per cent. When asked what the increased efficiency produced by the movement on the line of the Iron Mountain in Arkansas was, he stated that it would be difficult to put in the shape of figures beyond what he had given, but he said: "We get a 25 per cent to 26 per cent larger train haul than we formerly did, but the increased capacity of cars has not helped us very much because, while it has been 43 per cent, the increased use of those cars has been only about 20 per cent, that is, the average tons per loaded car mile, due to various reasons, partly the Commission tariff, on account of the low minimum. Our freight cars have an average tonnage capacity of 33.62 tons; their minimums on very many articles are not one-half that amount, and my recollection is there is no minimum in Arkansas (under the Commission tariff) that is higher than 30,000 pounds. We have those difficulties to contend with." (R. 392, 394.)

Counsel, at the hearing below, contended that the lower line of the chart, showing diminution in revenue, repre-

sents fluctuations in interstate rates in the State of Arkansas. He is obviously mistaken in that. The chart represents the revenue on the St. Louis, Iron Mountain & Southern System, including five or six States, and not in the State of Arkansas, alone, and could not, therefore, represent fluctuations in interstate rates in that State. The chart, in truth, however, largely reflects conditions that are independent of, and not connected with, the tariff of charges—results growing out of the changes in the cost of labor, material and everything that enters into the cost of operation, increased taxation, and burdens imposed by legislative requirements. Every element of increased expense enumerated by Mr. McPherson would have a direct bearing on the relation between earnings and revenue, without any regard to the rates that were charged for the service. The effect of the conditions described by him would necessarily require higher revenues for the purpose of meeting the increased expenditure, and as the revenue depends on the rates received for service rendered, it may well be that a rate that would have produced a reasonable return in 1900 would not do so in 1907. But that fact is not illustrated nor represented on the chart. Counsel labor under a misapprehension. (Twenty-five copies of said chart are filed, it having been omitted from the printed record.)

THE STATE'S EXHIBIT Z OF NO VALUE.

The State, for the purpose of meeting the testimony of Mr. McPherson, filed exhibit Z, which is a comparison of revenue and expenses per train mile for the years ending

June 30, 1897, and 1907, as shown by the Interstate Commerce Commission's reports for those years.

Examination of that exhibit in the light of the conditions existing in the year 1897 will show that it is of no value for the purpose for which it was used. It shows that on the Iron Mountain Railroad System the operating revenues for the year ending June 30, 1907, was 50 per cent greater than in the fiscal year of 1897, and that the expenses were 40 per cent greater; the net revenue per train mile being 69 per cent greater, in the latter, than in the former year.

But the year 1897 was so exceptional that it cannot be made the basis of a comparison. It was a period of great depression and falling off in the business and in the earnings of all railroads, and that accounts for the difference that is shown in the figures that appear in the exhibit.

Mr. F. P. Johnson, an expert accountant in the employment of the St. Louis, Iron Mountain & Southern Railway Co., testified that the statistics shown by the exhibit were taken from the annual report of the Interstate Commerce Commission for the year 1897, that the opening statement of that report contained the following statement as to its statistical value:

"A review of statistics of operation since 1890 would disclose the fact that each year ending June 30, from 1890 to 1893, inclusive, closed with an increase in net and gross earnings as compared with the previous year.

"The year 1893-1894, however, proved to be a disastrous one for railways, the gross earnings being less than

\$147,000,000 and the net earnings \$50,000,000, than the corresponding items of the previous year.

"The year 1894-1895 showed practically no recovery from the depression of the previous year.

"The year 1895-1896 closed with an increase in gross earnings of \$74,000,000 and net earnings of \$27,000,000. But this movement toward better conditions did not continue during the year covered by the present report, which, as compared with 1896, shows again a decrease in gross earnings of \$28,000,000 and in net earnings of \$7,000,000.

"It was not until June, 1897, that is to say, the last month of the twelve covered by this report, that the railway earnings showed a healthy revival of commercial conditions. This fact indicates the character of the year covered by the present report *and must be held in mind by one who endeavors to interpret the figures about to be presented.*" (R. 2003-4.)

Continuing, Mr. Johnson testified that the year ending June 30, 1907, was one of the best in the history of the railroads, and that fact is not controverted. (R. 200-203.)

Exhibit F-1, filed by the State in this case, was also referred to by counsel for the purpose of showing heavier train loading in 1907 than in 1897. Mr. Johnson, referring to this exhibit, stated that it was subject to the same criticism as exhibit Z; that it compared two periods entirely different in their character, and in addition to that, so far as the passenger service on exhibit F-1 is concerned, it gives no consideration to the change in revenue produced by the two-cent passenger fare. (R. 2004.)

We submit that no just or fair comparison can be made between the two years taken for that purpose, on ac-

count of the great dissimilarity in the conditions. Learned counsel asserted, in argument below, that McPherson's exhibit 30 contained a similar comparison. He was mistaken. It does not purport to make any comparison as between periods, but was solely intended to show the continuous increase in the prices of labor and material from 1897 to 1907.

DIVIDENDS.

Exhibit 47 shows the dividends paid by the St. L., I. M. & S. Ry. Co. from 1904 to 1909 inclusive. The Company paid 10 per cent dividends from 1904 to 1907. In 1908 the dividends dropped to 5 per cent and in 1909 to 4 per cent. The dividend for 1908 represented the fiscal year ending June 30, 1908, and embraces the period covered in this suit. The total track mileage of the St. Louis, Iron Mountain & Southern Railway during the period covered, was 2,599 miles, that in Arkansas 1,353 miles, constituting 52 per cent of the total track mileage. (Statement No. 3, Exhibit No. 3.)

Dividends to a certain extent represent earnings from operations, but not wholly, because every conceivable source of revenue, not only from freight and passenger and mail and express business in Arkansas, but in Missouri, Illinois, Oklahoma, and Louisiana, contributes to it. The dividends represent every class of business on the system, interstate as well as domestic, in each one of the several States in which the system is operated. It also represents all revenue that accrues from investments. The Iron Mountain

Railway owns a large part of the bonded indebtedness of other railroads, among them, the Texas & Pacific Railroad, and the earnings of the latter contribute to the dividends of the former.

The fact that the railroad company may be earning sufficient to cover operating expenses, meet the interest on its bonds, and provide a dividend on the entire system, does not affect its right to earn reasonable compensation on its state business, which is a very small part of the business of the Iron Mountain Railway System. The intrastate earnings in Arkansas for the last half of 1907 were \$1,476,000, or less than 12 per cent of the total earnings of the system, and much less if the revenue from the investments is considered. So it may well be that a loss on that small proportion of the business made up of short hauls and the more expensive classes of business to handle, would not affect the result of the entire volume of business to the extent that it would prevent the earning of dividends on the total business and the profits accruing from investments.

The court, in the case of *Smythe v. Ames*, 169 U. S., p. 466, discussing that question, said this:

"It is further said in behalf of the appellant, that the reasonableness of the rates established by the Nebraska statute is not to be determined by the inquiry whether such rates would leave a reasonable net profit from the local business affected thereby, but that the court should take into consideration, among other things, the whole business of the company, that is, all its business, passenger and freight, interstate and domestic."

That is what is represented by the dividends introduced in evidence here, the whole business and receipts from every source on the entire system.

"If it be found upon investigation that the profits derived by a railroad company from its interstate business alone are sufficient to cover operating expenses on its entire line, and also to meet interest, and justify a liberal dividend upon its stock, may the Legislature prescribe rates for domestic business that would bring no reward and be less than the services rendered are reasonably worth? Or, must the rate for such transportation as begins and ends in the State be established with reference solely to the amount of business done by the carrier wholly within such State, to the cost of doing such local business and to the fair value of the property used in conducting it, without taking into consideration the amount and cost of its interstate business, and the value of the property employed in it? If we do not misapprehend counsel, their argument leads to the conclusion that the State of Nebraska could legally require local freight business to be conducted even at an actual loss, if the company earned on its interstate business enough to give it just compensation in respect of its entire line and all its business, interstate and domestic. We cannot concur in this view. In our judgment, it must be held that the reasonableness or unreasonableness of rates prescribed by a State for the transportation of persons and property wholly within its limits must be determined without reference to the interstate business done by the carrier, or to the profits derived from it. The State can not justify unreasonably low rates for domestic transportation, considered alone, upon the ground that the carrier is earning large profits on its interstate business, over which, so far as rates are concerned, the State has no control. Nor can the carrier justify unreasonably high rates on domestic business upon the ground that it will be able only in that way to meet losses on its interstate business. So far as rates of transportation are concerned, domestic business should not be made to bear the losses on interstate business, nor the latter the losses on domestic business. It is only rates for the transportation of persons and property between points within the State that the State can prescribe; and when it undertakes to

prescribe rates not to be exceeded by the carrier, it must do so with reference exclusively to what is just and reasonable, as between the carrier and the public, in respect of domestic business. The argument that a railroad line is an entirety; that its income goes into, and its expenses are provided for, out of a common fund; and that its capitalization is on the entire line, within and without the State, can have no application where the State is without authority over rates on the entire line, and can only deal with local rates and make such regulations as are necessary to give just compensation on local business."

The falling off in the dividends during and after the fiscal year, 1908, may be accounted for by the conditions developed in the testimony of Mr. McPherson. It would be the natural and necessary consequence of the facts and conditions shown in his testimony. He showed that there had been a gradual increase in the cost of material, supplies, and labor from 1898 to 1908; that in the early part of the year 1907 increases were made affecting the wages of nearly 20,000 employes in the various departments of service, which item, alone, amounted to \$215,214.00 during the last six months of the year 1907, or 6.7 per cent of 65.9 per cent of the entire operating expenses in the State. That during the same period the cost of materials made a substantial advance; that the cost of operation in Arkansas was increased \$48,053 under the new classification of operating expenses issued by the Interstate Commerce Commission under the Hepburn Act, which act became effective in August, 1906, and \$67.104 under an act of the Legislature of Arkansas requiring railroads to employ additional brakemen on all trains composed of more than twenty-four cars, the increase having been made in May, 1907.

The validity of the act was upheld by this court in
C., R. I. & P. Ry. Co. v. State of Arkansas, 219 U. S. 453.

COMPARATIVE COST OF OPERATION.

Exhibit 6, filed by the railroad companies shows that it cost 36 cents less to earn \$100 on the St. Louis, Iron Mountain & Southern Railway in the State of Arkansas during the six months ending December 31, 1907, than it did to earn \$100 on the entire line during the preceding fiscal year; that it cost \$9.54 more to earn \$100 in the State of Arkansas than it did upon all of the lines of railroad in group 8, which is composed of the States of Oklahoma, Kansas, Missouri, south of the Missouri River, parts of Texas, Colorado, New Mexico, and Arkansas, during the same periods. Counsel in the argument at the hearing below drew the conclusion, and based an argument upon that showing, that was unfavorable to conditions on the Iron Mountain Railroad in Arkansas as compared with other lines, both with regard to the revenue and manner of operation. The figures referred to show the ratio of expense to the gross earnings. Counsel cross-examined Mr. McPherson as to these statistics. He testified that the ratio of expense to gross earnings is not an index of much value for comparative purposes. (Record, p. 298.) It depends upon several factors, on conditions, favorable or otherwise, that may permanently differ between railroads; conditions that may come about in the same year and different years on the same railroad. It depends on traffic and on expenses, also on the standard

of maintenance; the maintenance observed by the different railroads compared, or upon the same railroad in different years. It is entirely possible for that ratio to vary between railroads as much as 10 per cent from the maintenance put upon the property by different roads or upon the same railroad in two different years. Taken independently, without analysis of its factors for comparison to determine the efficiency of operation, the road that expended less than a sum sufficient to preserve its standard of maintenance would apparently be better operated and more favorably conducted than a road that preserved its standard of maintenance by expending a large sum.

Again, speaking of exhibit 6, he says it is between two different periods; one the fiscal year ending June 30, 1907, the other the six months' period ending December 31, 1907. The conditions that existed during these periods were unlike. The cost of operation during the latter period was increased largely for various reasons—increased cost of labor, increase in the cost of material, etc. Then he gave in detail some of the increases in the cost of labor, and stated further that during the same period the cost of all materials used by the railroad in its operation and maintenance made a substantial advance, quoting in support of the statement from bulletin No. 75 of the Department of Commerce and Labor, issued in March, 1908, heretofore referred to in connection with his testimony.

He says at page 301, that the ratio of expense to earnings on the Iron Mountain as a system for the fiscal year

ending June 30, 1907, was 62.8 per cent, and the ratio for the United States was 67.53 per cent, 4.73 per cent greater than on the Iron Mountain, and in group 8, 64.34 per cent—1.54 per cent greater than on the Iron Mountain. He then makes a comparison of the operating ratios of railways touching Arkansas, and those operated under similar conditions for the fiscal years ending June 30, 1907, and June 30, 1908, taken from published annual reports for the purpose of showing that the increase in the ratio of operating expenses was not confined to the Iron Mountain Railroad alone. This comparison will be found at page 301 of the record. The similarity of conditions grows out of the fact that similar wage conditions affected all the railways used in the comparison. Since exhibit 6 was filed, he had obtained the advance bulletin of revenues and expenses of systems of railroad issued by the Interstate Commerce Commission, which enabled a comparison to be made of the six months from July to December, 1907, inclusive, the result of which is shown in exhibit 31 filed by him, and bears out his statement as to the general ratio of increase of operating expenses on all lines of road in the country.

Counsel assume that exhibit 6 shows a larger earning from passenger business on the Iron Mountain than on other roads in group 8, and throughout the country generally, but exhibit 31 shows that the ratio of earnings on the St. Louis Southwestern Railway and the Iron Mountain during the last half of the year 1907 is lower than on other lines, and

in fact, that the passenger business on these roads was not as large as the average of the United States, or as a large number of other railroads operating in the same territory. The two-cent rate during the period involved was in force in Missouri. The percentage on the Illinois Central Railroad, where the two-cent rate applied, was the same as the Iron Mountain in Arkansas, both being 21.05 per cent. Counsel fell into the error of making this comparison and illustration from exhibit 6, which covers the fiscal year ending June 30, 1907, as to the States in group 8, and the last six months in 1907 as to the St. Louis, Iron Mountain & Southern system, and that part of the line in Arkansas, while the bulletin from which exhibit 31 is compiled makes the comparison upon the same period. The information as to the earnings and expenses for the last half of the year 1907 was not accessible at the time exhibit 6 was prepared, and that exhibit is unreliable for the purpose for which it was used by counsel.

THE PERIOD COVERED BY THE ACCOUNTS AFFORDS A FAIR TEST AS TO THE REASONABLENESS OF THE RATES.

The accounts introduced by the St. Louis, Iron Mountain & Southern Railway cover the calendar year 1907. They are stated separately and the earnings for each six months' period is shown.

The accounts of the St. Louis Southwestern cover the fiscal year ending June 30, 1908, divided into two periods and showing the earnings for each half of the fiscal year separately.

The State's accountants adopted the last half of the year 1907 in making up their statements and applied their theory of dividing the expense of operation between interstate and intrastate traffic, based on the performance in the month of October. They had access to, and investigated so far as they wished to do so, all the accounts showing all earnings and expenses of both companies for previous years.

The business and gross earnings of both roads were shown to have been larger during the six months ending December 31, 1907, than in any other similar period, and the gross earnings per mile above the average of the eight years preceding it. These facts sustain the court's finding that:

"In view of these facts there is no substantial ground for the claim that the period selected by complainants was unfair to the State or insufficient to enable the court to determine the issues in these cases, or that the earnings and

expenditures for these periods do not show a fair average of the business of complainants, at least fair to the defense. The fact that the able counsel for the State, and expert accountants did not call for data of other periods than those produced by complainants and in evidence, is, if not conclusive at least persuasive that they considered the evidence offered sufficient for a just determination of the issues involved." (P. 23.)

The panic that came on in the latter part of 1907 was not felt in time to affect the business of that period. This is abundantly established by the evidence of R. E. Kimbell, the Assistant Auditor of the St. Louis Southwestern, who testified that the panic began in November, but was not seriously felt until the early part of 1908. (R. 160.)

The best evidence on that point is a comparison of the earnings of that period with previous years. The evidence shows that the gross earnings of the St. Louis Southwestern Railroad for the last half of 1907 were \$5,427,121.82. During the same period in 1906 they were \$5,341,994.91; 1905—\$4,594,748.99; 1904—\$4,753,032.78; 1903—\$4,064,853.19. On the St. Louis, Iron Mountain & Southern road the gross earnings for the last half of 1907 were \$12,385,947.00; 1906—\$11,833,245.96; 1905—\$10,395,654.67; 1904—\$10,334,596.81; 1903—\$10,128,966.95. (Exhibit 45.) These statistics we submit settle any question as to the effect the panic may have had on the last half of the year 1907.

ALLEGED IMPROPER CHARGES AGAINST THE EXPENSE OF OPERATION AND OMISSIONS FROM EARNINGS IN INTRASTATE BUSINESS.

The State contends that certain charges were improperly made to intrastate business by the court. Statement No. 4 filed with exhibit 3 is a statement of operating expenses during the six months in question. Under the head of "Maintenance-of-Equipment" there appears a total charge of \$63,288.35 for repairs to tools and machinery, 77 per cent of which, or \$48,671.67, is charged to the State of Arkansas and is divided between intrastate and interstate expenses. It is contended that this sum is expended at the Argenta shops because they are the largest of the system, that the shops in Missouri and Kansas are smaller. The court found that there was nothing in the evidence to indicate what would be a proper sum to be charged, which is undoubtedly correct. The ground of the State's contention in the court below was that a larger ratio was charged to the State on that item than on other items. The average ratio of the charge of "Maintenance-of-Equipment" to the State was 55 per cent of the total. The items vary, ranging between 53 per cent and 77 per cent. The State contends that it should not exceed 55 per cent, that is the average ratio chargeable to the State. The same contention might be as logically made by the railroad companies as to any item that dropped below 55 per cent. The exhibit was filed by Mr. F. P. Johnson of the auditing department of the railroad company. He was examined in regard to it and

testified that the item related to repairs of tools and shop machinery and heating and lighting, and is charged to the operating division, that is to the jurisdiction of each master mechanic. In Arkansas the principal machine shop is at Little Rock, which entails a heavier expense than at any other division point because it is larger than any other division point in the State. Miscellaneous shop expenses, such as this item, are not apportioned over the entire Missouri Pacific System, but are localized to the particular division, on which each shop is located. The general repair accounts applying to locomotives and cars is apportioned over the system. If the shop accounts were apportioned over the entire system in like manner, Arkansas would be compelled to stand a proportion of the expense incurred at shops located in other States. "If we were to pool this amount on the same basis that we pool the repairs to locomotives and cars, I think the amount charged to the State of Arkansas would be just as large." The shop account is of a local nature. (R. 142.) The evidence shows that the system is uniform and has been in existence for a long time on the Missouri Pacific Railroad. The \$63,000 contained in this item applies to the Iron Mountain and the \$48,000, which is charged to Arkansas accrues at the shops in that State. Mr. Johnson testified that they were larger and of more importance than any other shops on the Missouri Pacific system, except those at Sedalia, Mo.

The method of dividing operating expenses, taxes and fixed charges on the St. Louis, Iron Mountain & Southern Railway System between states and between freight and passenger business is set forth in statement No. 5 to exhibit 3. (See R. 2310.) This method has been in use a long time and presumably has commended itself to the operating officials of the system as the best that could be applied for that purpose. We submit that it should require something more than mere criticism of persons without knowledge or experience to justify a finding that the method was not adopted in good faith or did not result in a fair and proper distribution. The best evidence of the propriety and reasonableness of administrative methods in the operation of large and complicated business or properties is the practice of those charged with the responsibility of operation, the methods adopted by whom are presumably the result of knowledge based on experience and observation, and will not be lightly set aside.

RENTAL OF ST. LOUIS SOUTHWESTERN TRACKS AND VAN BUREN BRIDGE.

The St. Louis, Iron Mountain & Southern Railway has trackage rights over the rails of the St. Louis Southwestern Railway from Paragould, in the State of Arkansas, to the Thebes bridge in Missouri, a distance of 110 miles, 34 miles of which is in the State of Arkansas, and the operation of which is chargeable to that State. The expense was charged in the railroad accounts as an operating expense, and divided between intrastate and interstate business.

The tracks of the St. Louis, Iron Mountain & Southern Railway cross the Arkansas River to the north side at Fort Smith, and run to Van Buren on the north side of the river, a distance of eleven miles. The main line of the St. Louis & San Francisco Railway crosses the river at Van Buren, and runs directly to Fort Smith, the distance being five miles. The St. Louis, Iron Mountain & Southern Railway has a contract with the St. Louis & San Francisco Company for trackage rights over the bridge of that company crossing the river at Van Buren, under which they contract to pay for locomotives \$2.00, freight cars \$1.50, passenger cars \$2.00, with a minimum of \$1,000 per month. Two passenger trains a day crossed the bridge during the time in controversy.

The State objected to both these charges. Their objection in regard to the tracks leased from the St. Louis Southwestern Railway was that no part of it should be charged to intrastate traffic, inasmuch as the track was used exclusively for interstate traffic. The objection to the rentals for the Van Buren bridge urged at the hearing below was on the ground that the use of that bridge was unnecessary to the traffic. The court found that the interstate business was benefited by relieving the tracks of the company of the intrastate trains, thereby facilitating the movement of all classes of trains and business on the line of that company. (Opinion, pp. 41, 42.) Mr. McPherson was examined in regard to these charges and the propriety of distributing them among the different classes of traffic. He said:

"The Iron Mountain Railway found from the enormous volume of traffic between Bald Knob and the State line, that it must make further provision to handle it expeditiously. There were two things that might be done; one was to build a double track, and the other was to ascertain if a track already existing could not be secured at a reasonable cost to relieve the situation, and the latter arrangement was made.

"No local business is done on that line between Paragould and the State line. It is merely a through line. After this arrangement had been completed, it was found as a practical business proposition, that it would be better to use it for interstate traffic, and that is the present practice.

"It results in expediting the traffic from Bald Knob and the State line over the main line of the St. Louis, Iron Mountain & Southern, and is to all intents and purposes the same as a double track.

"Q. In view of the fact that it is used exclusively for interstate business, do you regard it as proper that any part of expenses should be charged into the intrastate traffic of Arkansas?

"A. Yes sir; because it is the same as a second track or double track, located on our right-of-way, and the purpose of that double track would be to expedite the business of that division.

"An enormous amount of local business is handled between Bald Knob and Knobel, and the relief that it gives to the main line makes it one of the instruments of aiding transportation, making it possible, in effect, to conduct the transportation of the intrastate and interstate business, both freight and passenger." (R. 285, 286.)

Referring to the Van Buren bridge, he testified:

"Whatever aids in the facilities of the railway is a charge to the entire traffic that it handles. It may be that that added facility would handle only freight business; or, that would handle only passenger business. But a necessity

existed for relieving the entire operation. Otherwise, the facility would not have been added to the railway company's development.

"Now, the Van Buren bridge adds to the general facilities of the company in that way. It expedites the movement of all traffic.

"Likewise, the Little Rock Junction Railway. It may be used only for freight purposes, but it is necessary in order to facilitate the handling of all trains.

"Freight trains can go in there and get out of the way of passenger trains, thereby aiding the passenger trains.

"They are the material aids to all of the traffic that the company would handle." (R. 286.)

Mr. F. P. Johnson testified that:

"The Cotton Belt (St. Louis Southwestern) track is practically a double line, and when we secured the privilege to operate over the Cotton Belt to Paragould, and to the State line and north of that, it benefited our main line from Texarkana to St. Louis to the extent that it gave us more use for other than through freight business."

Referring to the rental of the Van Buren bridge, he testified:

"It was in line with other rentals. We have not attempted to divide our rent at all for freight and passenger service based upon the actual facilities we rent any more than we attempt to divide our taxes." (R. 177-179.)

The above is all the testimony in explanation of the charges, and we do not think anything need be added to what the witnesses have said.

AMOUNTS PAID TO ATTORNEYS OUTSIDE OF THE STATE, LOBBYISTS AND TEN THOU- SAND DOLLAR FINE.

These assignments are based on the following facts:

The evidence showed that a fee was paid by the St. Louis, Iron Mountain & Southern Railway Company, to Mr. Leake, an attorney at Dallas, Texas, for legal services rendered the company; that salaries were paid certain agents for services in connection with matters pending before the Legislatures of the States of Arkansas and Missouri, and that a fine of \$10,000 was adjudged against the company on account of the issuance of passes to members of the Legislature of Arkansas. The state of the evidence on those points is summed up by the Court in its findings:

"Another claim is that the State of Arkansas is charged with part of the salaries paid to Messrs. Phelps and Seibert, shown by the accounts of the Iron Mountain to have been connected with the legal department at the headquarters in the city of St. Louis, Mo., and of Mr. Cox, who was, during the year 1907, residing at Little Rock. It is claimed on the part of the State that the services of these parties were for lobbying and therefore not a proper charge. But there is no evidence to sustain the claim that the salaries were paid for such services. The failure of the railway company to show what the services were for which they were compensated does not justify the court in finding upon a mere suspicion that they were for services which are unlawful and against public policy. The burden to prove an unlawful act is upon the party charging it, and will not be presumed in the absence of evidence to that effect." (Opinion, p. 41.)

This applies also to the small fee of \$800 paid to Mr. Leake.

Referring to the fine, the court, in its findings, says:

"The evidence fails to show whether this was done with the knowledge and approval of the higher officials of the company, or by the inferior officials for whose acts the company is, under the statute, responsible. As there is no presumption of an unlawful intent, in the absence of proof, the court is not inclined to sustain this claim without determining whether it could under any circumstances be sustained." (Opinion, p. 40.)

MEMPHIS AND FORT SMITH TERMINALS.

The St. Louis, Iron Mountain & Southern Railway has a terminal yard at the city of Memphis, in the State of Tennessee. Its line of road terminates at that point. The extent of its tracks is 2.07 miles. It is the end of the Memphis Division, just across the State line. The cost of operating the yards is charged to Arkansas, and in the accounts of the railroad company it is divided between state and interstate traffic as other accounts are. All the facilities in the Memphis yards are necessary for operating the trains and doing the work for the Memphis Division, which extends from that city to Bald Knob, in the State of Arkansas. All the roundhouse work for that division is carried on in the Memphis terminals. If it were not charged to Arkansas, all the expense of maintenance growing out of the work of that division could not be charged to any account, as the road terminates there. If the line extended beyond Memphis, in the State of Tennessee, it would be proper, and conform to universal usage, to charge that expense to the State of Tennessee. This charge does not include the expense of traffic. That is charged to traffic, and not as an

operating expense. The matter is clearly explained in the testimony of Mr. McPherson, who was entirely familiar with the conditions. He testified:

"There must of necessity be a terminal on the Memphis Division; and it is immaterial whether it is on the east or on the west side of the Mississippi River. The fact that it is on the east side of the river is an accident of convenience.

"If there were no terminal on the east side of the river there would of necessity have to be a terminal on the west side.

"The expense of the bridge transportation and of the interchange of cars, with other railroads at Memphis, is not an operating expense; it is an expense that traffic bears directly.

"It costs no more to operate the terminal on the east side of the river than it would on the west side. And if no part of the expense of the Memphis terminal were charged to state traffic or intrastate traffic, then the expense of caring for locomotives and cars, supplies, fuel, would not follow the local work that was done by the trains on the Memphis Division.

"The trains between Bald Knob and Memphis handle a great deal of local freight, and unless a part of the expenses were chargeable to intrastate traffic, no expense for handling that freight would appear in the operating accounts, as a charge against them.

"The expense of handling the intrastate freight should be a charge to that freight, regardless of where the terminal may be." (R. 280, 281.)

"The Iron Mountain Railroad does not operate any lines in the State of Tennessee. There are substantially no earnings on that business in Tennessee that the Iron Mountain receives, and so far as the accident of location is concerned, it would be the same to the railway company whether delivery was made to it on the east side or on the west side of the river." (R. 349.)

There is where the distinction arises. If it operated a line in the State of Tennessee, then the railroad would treat that expense just as it does elsewhere—it would charge it to the State of Tennessee. But there is no operation in the State of Tennessee, and for that reason, if we are to meet the conditions that exist here, it is bound to be charged to the State of Arkansas.

Its yard trackage in that State is 2.07 miles, including the bridge, more than two-thirds of which is in the State of Arkansas. If its lines extended into the State a different proposition would be presented. It would then be proper to treat Memphis as a Tennessee terminal, and to charge expenses to it as incurred in that State. That is the manner in which operating terminal expenses are carried on the Missouri Pacific-Iron Mountain System, wherever their lines are operated in a State.

If we were to eliminate from the accounts all of the expenses incurred at the city of Memphis, we would not be charging to the trains that operate in this State any of the terminal expense incurred at the end of their runs into Memphis or at the beginning of their runs out of Memphis; the roundhouse and yard accounts would not correctly reflect the actual cost of operating those trains in this State. It is not a terminal expense charged to traffic like the handling of freights carried; it is an operating expense.

In this connection, let us see the situation at Fort Smith. Counsel for the State stated in the argument at the hearing that he would not object to either one of these

charges if they were consistent, but it was inconsistent to treat Memphis and Fort Smith both as Arkansas terminals, because Memphis is in the State of Tennessee and Fort Smith in the State of Arkansas.

There are some minor repair shops at Van Buren of small importance, but there are no shops at Fort Smith, and it is simply a way station on the line of the road, which extends into Oklahoma and points beyond Fort Smith for a considerable distance, and the expense at this point is small. If Fort Smith is regarded as a divisional terminal, it should be treated as every other terminal station where operating terminal expenses are incurred on the Iron Mountain system. There are shops and much larger terminal facilities at Poplar Bluff which serves Arkansas territory just as it is claimed that Fort Smith serves Oklahoma. All that expense is charged to Missouri. But the fact is, as stated before, there are no repair shops at Fort Smith, and there are no operating terminal expenses of any great amount. The situation is the same at Carthage, Mo., on the White River branch and at Coffeyville, on the Kansas and Arkansas Valley Line. There is no more reason why Fort Smith should be treated as in Oklahoma than there is that Coffeyville should be treated as in Arkansas. The same condition exists in regard to Monroe, La., which is in a comparatively short distance of the Arkansas State Line, and is an important terminal. The operating expenses, however, are all charged to the State of Louisiana. This is a universal practice in the division of terminal operating

expenses throughout the entire Missouri Pacific and Iron Mountain systems, and no good reason can be given why Fort Smith should be treated as exceptional.

BUNCH ELEVATOR.

This is an elevator located partly on the right-of-way of the railroad yards at Argenta, Ark. It was operated by the T. H. Bunch Company, who claimed to own the improvements. The records show that a nominal rental for the elevator was carried in the account of the railroad company. The State introduced evidence to show that the plant (that is the elevator building and machinery) had a rental value of \$20,000 per annum, but there was no evidence as to the ownership of the property other than it was partly situated on the railroad's right-of-way. The State has assigned as error the failure of the court to credit the plaintiff with an annual rental in accordance with the value of the plant. There is not a scintilla of evidence in the record that would have justified the court in doing so. See the court's findings at page 38 of the opinion.

VALUE OF PROPERTY.

The witnesses for the State and railroad company expressed conflicting views as to the proper method of division. The State contends that the property should be divided with reference to its use and that the use is represented by the ton miles rather than by the revenue. In settling this question the court will be guided by the general rules applicable to all classes of productive property and the rules of reason, rather than by the opinions of witnesses. It is not a matter to be determined by the opinions of experts, but rests on the application of sound reason and the results of experience in determining what is the proper factor upon which to estimate the value of property, whose value consists in its earning capacity. A railroad company like a storehouse or a manufacturing plant, has no intrinsic value aside from the return it is capable of producing in its operation. The earnings is the test universally applied, so far as we know, for the purpose of determining the value of that class of property. This is the view taken by Judge Hook in *M. K. & T. Ry. Co. v. Love*, 177 Fed. 497, and by Judge Sanborn in *Shepard v. Northern Pacific Railway Co.*, 184 Fed. 765, 811:

"The issue is between the apportionment by use without regard to the worth or value of the use and apportionment according to the value of the use. The latter basis seems to be more logical and rational. Capitalization is founded on the worth of use, not on mere use. The value of property and investment in every form is measured by the value of its use, not by its use divorced from the value thereof."

The principle is nowhere better expressed than in the following statement by Judge Trieber in his opinion in this case:

"In estimating the value of property its net income, if not the most important, is certainly a very important factor. A building in New York City is valued much higher than a building exactly like it, and an erection of which cost the same price, situated in Little Rock. The reason therefor is that the income from its rentals is much higher in the former city than in the latter. So a building in Little Rock, or any other city, on its main business street, is of much greater value than if standing in the suburbs, although both buildings may be exactly alike, put to the same uses and cost the same. That the same rule should and does apply to railroads is shown by the market value of the stocks. While the share of a railroad whose earnings enable it to pay a 6 per cent dividend annually will command a premium on its face value, those of a railroad earning no dividends, and whose income is barely sufficient to earn the fixed charged are practically worthless, or will sell for a very low price, and that only on speculative grounds.

"Take two roads, one in a level country with practically no grades, inexpensive to maintain, and constructed by reason of these facts, at a low cost, while another road built in a mountainous, rocky country where it was necessary to do a great deal of expensive blasting of rock, building tunnels, with heavy grades and many curves. The latter road cost probably three or four times as much to build as the former, yet, owing to the level grades, absence of sharp curves and more productive lands along its line, the earnings of the former are much greater than of the latter. Not only that, but owing to the grades, the one road can carry only half as many cars as the other; the consumption of fuel, added to these the greater outlay for wages to employees, cause expenses to be so great as to leave small net earnings for that road whose cost was greatest, while the net earnings of the other are sufficient to pay large dividends. Can there be any doubt that the value of the first will be much greater than the latter, and that its shares will sell for a much higher price? The value of every investment or property is measured, to a large extent at least, by

the value of its use, not by its use divorced from its value. The value of a railroad for taxation, it has been uniformly held by the courts, may properly be determined by the values of its bonds and stocks. Without citing the numerous cases decided by the courts, both State and National, approving this method of assessing railroad, telegraph and other property of this nature, the following may be referred to:

"State Railroad Tax Cases, 92 U. S. 575; Kentucky Railroad Tax Cases, 115 U. S. 321; Western Union Telegraph Co. v. Massachusetts, 125 U. S. 530; Pullman Company v. Pennsylvania, 141 U. S. 18; Columbus, Southern Railway Co. v. Wright, 151 U. S. 470; Pittsburg, etc., R. R. Co. v. Barkus, 154 U. S. 421; Adams Express Co. v. Ohio, 166 U. S., where the court said:

"'Whatever property is worth for the purpose of income and sale, it is worth for the purpose of taxation.'

"And this is the rule sanctioned by the Supreme Court of Arkansas. Wells Fargo Express Co. v. Crawford County, 63 Ark. 576.

"This is evidently the rule recognized and acted on by the railroad assessing board of the State of Arkansas as shown by the evidence in this case. The main line of the Iron Mountain Railroad is practically a water level road; no mountains to cross, no rocks to blast or tunnels to excavate, and the leading commercial cities and industries of the State along its line. On the other hand, the White River Branch of that road was the most expensive road ever constructed in the State. Miles of it had to be cut out of rock and tunnels cut through rocky mountains; there are no large cities along its lines, and the country but sparsely settled; owing to the heavy grades and the many curves made necessary by the topography of the country, it can not possibly carry as many cars to a train and transport freight as economically as the main line. The State officials, charged by law with the duty of assessing the property, must have taken these facts into consideration when they assessed these railroads. The White River Branch, in spite of its great cost, was in 1907 valued by that board at \$19,000 per mile, and assessed on the basis of 50 per cent of its value at \$9,500.

while the main line was valued at \$45,000 per mile, and assessed at 50 per cent of that sum at \$22,500 per mile.

"For these reasons, the earning capacity of a railroad is the most important factor to be taken into consideration in determining its value. As shown above, it has been taken into consideration by the assessing officers of the State, and should be taken into consideration for the purpose of determining the apportionment of values in this case. If by reason of the higher rates allowed by the state tariff, the net earnings of the property are increased, the value of the property is correspondingly increased, and the assessment for taxation made accordingly." (See Opinion, pp. 46-49.)

"Capitalization is founded on the worth of use, not on mere use alone. The value of property, of investment in every form, is measured by the value of its use, not by its use divorced from the value thereof. Railroad rates are founded primarily on the worth of the use of the railroad machine by the various classes of freight and by the passengers, and not on the amount of the use only. In fact there is no proportioning or measuring relation between the various uses of property and its value when no regard is given to the values of the uses. On the other hand, the values of the uses of property, which its gross earnings substantially represent, present a natural and logical basis for apportioning its value to these uses." Love v. A., T. & S. F. Ry. Co., 185 Fed. 329.

"The value of property results from the use to which it is put and varies with the profitableness of that use." Postal Tel. Co. v. Adams, 155 U. S. 688, 697.

DIVISION OF EXPENSE BETWEEN INTRASTATE AND INTERSTATE BUSINESS.

REVENUE BASIS.

This question has been before the courts in a number of cases, and the great weight of authority is in support of the use of the gross earnings as a factor for dividing the expense of conducting traffic between the two classes of business. The question arose and was determined favorably to the revenue basis in Ames v. Union Pacific R. R., 64 Fed. 165, approved in Smythe v. Ames, 169 U. S. 466, C., M. & St. Paul R. R. Co. v. Tompkins, 176 U. S. 167, Nor. Pac. R. R. v. Keyes, 91 Fed. 47, 53, Arkansas Rate Cases, 163 Fed. 141, Buell v. C., M. & St. Paul R. R., Wisc. R. R. Comm. (1907), M., K. & T. R. R. Co. v. Love, 177 Fed. 493, Love v. A. T. & S. F. Ry. Co., 185 Fed. 329. The court is familiar with the rulings and it will not be necessary for us to review the cases in detail. Their weight and authority can not be impaired, or the cases brushed aside upon the ground that the question is one of fact, to be determined according to the evidence in each case, because the conditions affecting the question are general and prevail throughout the country. The same rule as to the relation of cost of service between state and interstate freight and passengers is bound to apply on different railroads and in different parts of the country. It is true that state rates differ, some being prescribed by state authority and others, where that authority has not been exercised, adopted by the railroads themselves, but in all cases and in

all parts of the country and on all railroads conducting interstate traffic the interstate rates as a rule are based on the local rates to the extent that they do not and can not, unless perhaps in exceptional cases, exceed the combination of local rates. In view of the similarity of conditions applicable to all railroads in all parts of the country, the rule *stare decisis* might well be applied.

A large amount of testimony was taken on both sides as to the proper basis of division. Many railroad officials of large experience in the operation of railroads and the management of railroad traffic were introduced by plaintiffs. Mr. W. B. Doddridge, whose life had been spent in railroad operation, and who had been general manager of both the railroads involved in this litigation, including the Missouri-Pacific Railway System, testified:

"There is no unit or basis that I am aware of by which such a separation or apportionment can be made with mathematical accuracy. For the reason that all classes of traffic are carried in the same cars, intermingled, over the same rails, in the same trains, handled by the same employees, using the same terminals, a definite separation of common expenses is impossible.

"To be fair and equitable a unit must be used that will reflect all of the average conditions under which transportation is furnished and charge each ton mile or each passenger mile with its proper proportion of all the expenses.

"In the establishment of rates many elements are considered, such as the physical cost of service, the weight, the distance, the competitive conditions, the space occupied, the character of the service, and the value of the service to the shipper. It is, therefore, necessary to use an arbitrary unit.

"In my judgment the best method that has been suggested for this purpose is what is commonly known and called the gross-earnings basis.' That is, the gross earnings derived from each class of traffic for the given period, being accurately known, the total expense for the same period being accurately known, the expenses between state and interstate traffic may then be divided and apportioned upon the per cent each class of gross earnings bears to the whole.

"The aggregate of gross earnings is made up of thousands of small units, each of these units representing the amount received for the transportation of individual shipments. The sums charged for transportation bear some definite relation to the cost. These sums vary being governed by circumstances and conditions; such as weight, distance, classification, and the commercial conditions under which the transportation is furnished. I refer to competition and other like conditions, which enter into and influence the rates charged on many classes of commodities and traffic.

"For instance, the railroads charge a much higher rate on many articles where the value is large and liability great, than they do on other articles where the weight and bulk is similar, but they are of less value.

"There are a great many considerations of this character that enter into and influence railroads in determining the proper rates to be charged for transportation.

"The gross earnings reflect all of these conditions and by allotting the expenses in proportion to the amount which each shipment produces in the aggregate, seems to be the most reasonable and equitable method by which expenses can be apportioned between state and interstate traffic.

Q. "Does the difference in the value of the articles transported and the liability incurred enter to any extent into the difference in rates and affect the difference in cost?

A. Yes, sir; these things are always taken into consideration as one of the factors to be considered in the establishment of rates.

"However, there are many other considerations that also affect the establishment of rates; such as competitive conditions between producing sections and consuming markets.

"The following example illustrates the general theory which I have in mind:

"The interstate rates upon the products of the forest, which constitute a large proportion of the tonnage of Arkansas, to the consuming markets in other states are established mainly upon the value of the service to the shipper and to the consumer, based upon existing commercial conditions.

"The physical cost of transportation in individual cases being a secondary consideration, as a whole the traffic yields a profit either directly or indirectly.

"Changes in rates are necessary from time to time and would affect the allotment of expense as between state and interstate traffic to that extent, while it is not contended that the actual physical expense would be changed.

"Interstate rates frequently extend across several states and if below normal by comparison with other rates, for the reasons stated each state would bear its pro rata in the reduced expense thus allotted.

"Other interstate rates as compared to the total may be abnormally high, which would tend to equalize the condition in the example pointed out.

"Interstate rates into and out of Arkansas must be so adjusted as to enable its products to find markets in competition with other producing sections. This principle is essential to the prosperity of both State and the railroads. Intrastate traffic depends upon this condition being maintained.

"Trans-state traffic as a whole being carried on at a much lower cost than short haul traffic, low interstate rates applied to that class of traffic in some cases work no injus-

tice to the intrastate traffic in the apportionment of expenses as a whole.

"The gross earnings method of apportionment of expenses deals with all of the intrastate traffic as a single unit and with all of the interstate traffic as a single unit, upon a system of general averages, without reference to individual shipments or particular rates." (R. pp. 455, 456.)

Mr. Frank Nay, Comptroller of the Chicago, Rock Island & Pacific Railway Co. (R. 632); W. M. Whittenator, General Manager of the Chicago, Rock Island & Pacific Ry. (R. 757), and others testified to the same effect.

Mr. McPherson testified:

"The revenues of the railway are derived from different sources; the transportation of passengers and freight, and from miscellaneous services rendered; rentals, etc.

"A division of these earnings can be exactly ascertained and, naturally, they reflect the value to the railway of each class of the service it performs.

"The passenger and freight revenue consist of both intrastate and interstate traffic; the 'revenue basis' is reflective of the efforts of the traffic men who made the rates, to consider, in a measure, the value and character of commodities, and the risk and distance attached to their transportation. This is apparent in the classification of commodities into classes and the different rates established for their carriage.

"The revenue derived represents the well established and generally recognized elements considered in fixing rates of the railway for the service it performs. The rates on first class freight are higher than on second class, on second class higher than on third class, and so on through the general classification and established schedule of rates.

"Differentiation in the commodities and rates is recognized by the railways, by the public for whom the com-

modities are transported, and by all of the railway commissions.

"The revenue, therefore, expresses value, character, risk and distance rather than quantity; and likewise considers, to no little extent, the question of cost, as it is obvious that it costs more to transport some commodities, and commodities in small quantities, than it does other commodities, and commodities in larger quantities.

"A consideration, therefore, of cost on the mere basis of quantity, would mean the blending of all classes of freight; a reduction of all classes of freight to a common unit, and the assumption that the cost of their transportation was equal. Also that the length of haul and other conditions affecting the cost were equal or the same.

"For these reasons, in my opinion, the revenue basis is a proper basis on which to apportion the cost, or to divide the cost of operation as between intrastate and interstate traffic." (R. 320.)

THE STATE DENIED THAT THERE WAS ANY
RELATION BETWEEN THE RATES AND THE
COST OF THE SERVICE, OR BETWEEN
STATE AND INTERSTATE RATES, AND CON-
TENDED ON THOSE GROUNDS THAT THE
REVENUE WAS NOT THE PROPER BASIS OF
DIVISION.

It was shown that all freights are classified by committees representing groups of railroads for the purpose of grading commodities with reference to the various conditions and elements that enter into and affect their transportation; that the element of cost enters largely and is a dominating influence in the classification made by those committees; that the Western Clas-

sification prevails in the territory west of the Mississippi River and was used largely by the Arkansas Railroad Commission. The testimony of Mr. F. O. Becker, the chairman of the Western Classification Committee, was taken, and he testified at length as to the methods pursued by that committee in making its classification and showed that it was made with reference to the element of cost. That they considered the density, the value, the character of the risk with reference to susceptibility to damage, and the volume. (R. 738.)

J. D. Watson, Assistant General Freight Agent of the St. Louis Southwestern Railway, testified that the purpose of classifying the various articles that are transported by the railroad companies is to determine the rates, that the classification fixes the rate to be applied. He further testified that the value of the service is a dominating and controlling influence in fixing the price of transportation. He described in detail the manner in which the classification is used. (See R. 555.)

C. E. Perkins, the General Freight Agent of the St. Louis, Iron Mountain & Southern Railway, testified that the object of the classification is to assign to one of the classes the various articles which are offered to a railroad for transportation; with the thousands of different commodities, any one of which may be offered to a railroad for transportation, we must have some guide as to the rating which would be applied on each particular article. The commodities have been gathered together by the classifica-

tion committee after years of work, and have been assigned to one of the various classes prescribed in the classification. Upon these various classes or ratings we base our freight rates. The classification does not give the rate on commodities; it assigns each commodity to a class upon which we publish rates. They run from 1 to 5 and from A to E; the highest class articles are in the first class except in the cases where ratings are made double first and so on.

He also testified that railroads make commodity ratings to meet special conditions. They are not controlled by the Western Classification, but in making them the cost of the service is always regarded, as far as the circumstances will permit it to be done and where the conditions, growing out of competition for instance, are such that they are compelled to disregard the cost of service, they would not attempt to meet them. (R. 585 and 592 and following pages, where he treats the subject in great detail.) See also evidence of B. M. Flippen, the Freight Traffic Manager of the Missouri-Pacific System. (R. 239.)

ZONES AND BLANKET RATES.

The State introduced exhibits 38-42, showing certain zones in which blanket rates were applied, and contend that the blanket rates within territory covered by the zones are inconsistent with the testimony of our witnesses. The reason and necessity for the establishment of blanket rates in zone territory, and especially in the Texas lumber adjustment, which covers a large territory and about which a good deal is said, was shown in the testimony of traffic

men introduced by plaintiffs. Mr. Perkins, at page 595, gave a history of the condition that led to the blanket rates on lumber in southern territory. He showed that the lumber traffic moved in very large quantities and long distances, affording long hauls, that the cars that carried the lumber north as a rule returned loaded with other commodities, and thus gave a steady movement to commodities in large quantities and steady employment to the motive power, enabling them to load their trains to the maximum carrying capacity in all cases and furnishing tonnage on a wholesale basis. He and other witnesses also testified that in view of the volume of traffic and the reciprocal movement growing out of it, the length of the haul and other incidents of the large lumber traffic from the Southwest, the railroads could afford to make low rates and realize a reasonable profit on the business; that while the rates might appear to be low from that part of the zone territory farthest removed from the market and high on the opposite side, these discrepancies were neutralized and the rates fairly equalized throughout the entire territory, and the revenue accruing from that business fairly represented the cost of the service.

The testimony shows that commercial necessity, for the protection of trade centers in various parts of the country, have rendered it necessary to establish zones within which similar rates are applied both in producing and consuming territory. Pittsburg and the surrounding country constitutes a zone, as does Chicago, Kansas City and various

commercial centers, with the adjacent territory, to and from which freight is transported at what is termed blanket rates; that is, a similar rate prevails within the territory embraced in a given zone. The rates are based on the rating from the common point, or commercial center of the zone, and on freight transported from the various sections into Arkansas the rates are fixed on differentials, taking Memphis and St. Louis as the basing points, and are on a uniform scale. The traffic men testified that such an arrangement was necessary on account of competition between different lines and for commercial reasons, that is to protect commercial centers. It is an evolution of trade and commerce. The testimony on the subject is too voluminous to be referred to in detail within the limits of a brief.

The same conditions growing out of the zones and blanket rates obtained in state traffic under the state commission rates. Blanket rates are applied by the State Commission in numerous cases; as, for instance, to coal from Coal Hill and all points west of there in the State of Arkansas, to Little Rock and to all points north and south of that place. Coal Hill is about one-half the distance from Little Rock to the western coal fields of the State.

We refer more in detail to this subject infra page 100.

C. S. Ludlam, a witness for the State, referred to Texas tariff 1-DD, which he testified covered 2,600 stations in Texas and represents a movement that may vary as much as four hundred miles in the length of haul, in which he says

the classification is disregarded. Mr. Perkins, referring to that condition, testified that the Western Classification governs in Texas traffic as well as all other traffic west of the Mississippi River; that there are exceptions to the classification applicable on Texas interstate traffic which change to some extent the rating or minimum weights as the case may be.

"While I do not feel that the zone basis of rates mentioned detracts to any great extent from the statements already made with respect to the cost of service, that element being present in a somewhat modified form, it is true that this basis is used only where commercial conditions fix it, or in cases where the mileage is great and the zone rate will yield approximately the same rate per ton per mile on account of the length of the haul. Our general basis of rates is to a large extent on a mileage scale, that is, the rates increase with the mileage, the increment being smaller as the distance increases. Our rates, as an example, from St. Louis to Arkansas, are 70 cents per 100 pounds, on first class, at Moark, the first station in Arkansas, and grade up as the distance increases to \$1.22 on first class at Fulton, in Southern Arkansas. This is also true in Louisiana, the rate to Jones Spur, the first station, being \$1.15 on first class and grading up to \$1.37 at Fenton, in the southern portion of the State." (R. 1623-4.)

For the purpose of further showing that the Western Classification was disregarded in the application of rates from St. Louis to Texas, Mr. Ludlam cited a number of instances in which he claimed that higher rates were applied to low class articles than to those of a higher class, comparing such articles as beer in glass and bar iron, excelsior and potatoes, hollow building tile with pig iron, etc. Mr.

Perkins in rebuttal reviewed this testimony and explained in every instance the ground upon which the apparent inconsistency in the application of the rates existed.

He showed that a low rate had to be applied to beer on account of large breweries located at various points in Texas, which necessitated a lower rate on that commodity in order to prevent the exclusion of beer from other states. He further stated that the rate on bar iron represented a fair and reasonable rate, and that they were obliged, on account of the conditions referred to, to accept a lower rate on beer. He then went through the entire list of commodities mentioned by Mr. Ludlam, there being some eighteen or twenty of them, and showed similar and exceptional conditions in each case, accounting for the apparent disregard of the classification in fixing the rates on those articles. For instance, excelsior, which he says is more or less a paper adjustment and is a very cheap commodity manufactured in the South; potatoes, which represent a relatively large movement and are a necessity of life, which, regardless of their perishable nature, will not stand as high a rate as horseshoes, with which Mr. Ludlam compares them. Pipe iron coils for refrigerating machines were compared by Mr. Ludlam with bar iron. Mr. Perkins explains that if the railroad company was not limited by factors beyond its control the rate on the iron pipe would undoubtedly be higher than the rate on bar iron, but the Texas Commission, on account of pipe being manufactured at the penitentiary at Rusk, in that State, established an extremely low rate in the State, which forced correspond-

ingly low rates from interstate points. This fact, he said, only emphasizes what has been said with respect to the effect of state rates upon interstate rates. He reviewed all of the exceptional rates mentioned by Mr. Ludlam, and further testified that the tariff from which Mr. Ludlam testified covered practically all the articles which can be shipped—thousands of them in number; that it is governed by the Western Classification, a copy of which was in evidence, except where exceptional conditions made it impracticable to apply the classification. (R. 1625, 1626 and 1627.)

See also evidence of J. D. Watson, Record 1674.

One of the most intelligent witnesses introduced by the State, and the only man of any practical experience in railroad traffic, was Mr. J. C. Lincoln, manager of the St. Louis Traffic Bureau. He first stated that the cost of service is not the factor that controls in making rates, but on cross examination he testified:

"The results of operation necessarily as to the revenue would have to have some regard to the cost of service or you would go into the hands of a receiver. If the railroads disregarded it and handled its business without regard to the cost of service, it would either have to get a receiver or rules in that respect that all other industrial institutions are they ought to be. The Western Classification Committee considered a great many things in the development of proper rating, the cost, the risk, the density and the volume of traffic. They take into consideration the cost of handling those different commodities. Their classification is the best prepared document of the relations that should exist between different commodities. The classification shows the rela-

tion that should exist, not the rates. Railroad statistics are kept as an index to the business handled by your railroad, the operating cost of service, cost of handling business over certain divisions." (R. 980.)

These statements clearly bear out the evidence of traffic officials of the railroads. They have before them the information referred to by Mr. Lincoln, and naturally they use that information and apply it in adjusting rates.

RELATION BETWEEN INTRASTATE AND INTER-STATE RATES.

Counsel in their argument at the hearing of these cases in the court below commented at some length on the effect of the testimony in regard to rates from St. Louis to Texas common points upon the question as to the relation between state and interstate rates, contending that there could be no parity under the conditions disclosed. But in truth the record shows that the same conditions existed under the state commission rates. An examination of their schedules will show a blanket rate on coal from Coal Hill and all points west of there in the State of Arkansas to all points north and south of Little Rock, embracing a territory of hundreds of miles. Coal is the largest commodity moved under the commission rates, and the conditions in regard to the rates are in all respects analogous to that shown by the testimony and exhibits of the State referred to. Under the commission tariff sugar carries a flat rate of 13c for 200 miles and everything in excess of that. So it is with regard to rice. Rough material has blanket rates from one to 50 miles, from 50 to 100 miles, from 100 to 150 miles, and from 151 to 250 miles. The rates operate in the same way in regard to the state traffic that the blanket rates do in the zones shown on the exhibits referred to. The Texas zone is quite large; that relating to lumber covers 500 miles, but a comparison of those distances with the average haul in the State of 72 miles with a blanket rate of 25 miles, 50 miles, 100 miles and so on will disclose some pretty close

analogies running through them. On cotton in the state movement there is a maximum rate of 40c on all hauls 150 miles. Cotton seed hulls, coke, coal slack, cord wood, all have the same rate under the state tariff for from one to 50 miles; flour in carloads from 90 to 150 miles; rice from 100 to 150 miles; iron, wire, nails, from 25 to 75 miles; rails and fastenings from 60 to 100 miles; live stock from 180 to 250 miles. Packing house products take the same rate for the first 35 miles in carloads; in less than carloads the same from 35 to 75 miles. These are all important commodities, and are only referred to as representative of the entire rate situation under the State's schedules in regard to blanket rates, as will be seen by an examination of the distance tariff, copies of which are filed for the use of the court.

It can not be maintained, therefore, that there is any ground upon which a distinction between state and inter-state rates can be made on account of the creation of zones and the application to them of blanket rates.

In this same connection it was shown in evidence by the State that a different revenue is received on the same commodities shipped across the State of Arkansas from points north or east into Texas. The same condition exists in the state traffic under the joint tariff. To illustrate: Take a shipment from Hope to Camden by the Iron Mountain Railroad, a distance of 65 miles. The Iron Mountain receives 38 cents on first class, 34 cents on second class, 30 cents on third class, and 25 cents on fourth class. Now, on a shipment

from Hope to a point on the St. Louis Southwestern Railway, 65 miles beyond Camden, making 130 miles—just double the distance from Hope to Camden—the Iron Mountain will get for its part of the shipment 32.5 cents on first class, on second class 28 cents, on third class 24 cents, and fourth class 20 cents. The inequality in the revenue from the same commodities referred to in the testimony of the State's witnesses grows out of the fact that it is handled by connecting lines. It is a joint haul, and the example shows that a similar condition prevails in the state traffic, where there is a joint haul over connecting lines.

T..A. Hamilton, a witness for the State, for the purpose of showing inequality between state and interstate rates, filed an exhibit marked "L-1," containing a comparison of the rates on that part of a haul from St. Louis to various stations in Arkansas which is wholly within the State with the Commission rates between the same stations. For instance, the first sheet of the exhibit shows the haul from St. Louis, Mo., to stations in Arkansas beginning at Moark and running to Peach Orchard, and compares that with the distance tariff of the Arkansas Railroad Commission, which contains graduated rates between the two points. The distance from Moark to Peach Orchard is 17 miles. The distance from St. Louis to Moark is 186 miles and from St. Louis to Peach Orchard 202 miles. There are three intervening stations, distant from St. Louis, respectively, 192, 195 and 198 miles. The rate from St. Louis to these five stations in Arkansas is the same.

There is no testimony in this case with which the facts illustrated by the exhibit conflict. Our traffic men have testified throughout the case that you can not make a comparison of a long distance interstate haul with a state haul in that way. They are bound to vary. It results necessarily from the effect of the long and short haul on rates. The stations referred to illustrate the effect of the exhibit throughout. The second sheet contains a comparison between shipments from St. Louis to stations in Arkansas beginning at Joly and going to Wynne, that is a distance of 80 miles. It compares the state rate from the state line with the portion of the interstate rate from St. Louis that is located in Arkansas. It is an attempt to compare the rate charged on a haul from 200 to 280 miles with a haul of 80 miles within the limits of the State.

Exhibits "C-1" and "D-1" are intended to show that the testimony of the railroad's traffic men to the effect that the interstate rates on the St. Louis, Iron Mountain & Southern Railway from St. Louis and Memphis are influenced by the State Commission's rates is incorrect. Exhibit "C-1" shows that the interstate rate from Memphis to Gum Springs, a station situated on the St. Louis, Iron Mountain & Southern Railway, 70 miles south of Little Rock, runs level from Little Rock to Gum Springs, while a graduated rate to all stations between Little Rock and Gum Springs is applied by the State Commission. Exhibit "D-1" shows the same conditions from St. Louis, and covers the same territory south from Little Rock. The following extract

from the testimony of Mr. Perkins, the general freight agent of the St. Louis, Iron Mountain & Southern Railway, will explain the conditions developed by these exhibits. He said:

"From a casual glance at the exhibit ('C-1') mentioned, it would not appear that there was any relation whatever as between the state and interstate adjustment. As a matter of fact, however, our rates from Memphis to all points in Arkansas were made by using three factors, one of which was the Arkansas Commission's local rates.

"At the time these rates were in effect the St. Louis, Iron Mountain & Southern had an agreement with the city of Memphis as to the rates which we would carry from that point to Arkansas as compared with rates in effect locally in Arkansas. That agreement provided that to points in Arkansas on the main line and branches south and west of Little Rock, except Fort Smith, Van Buren, the Greenwood Branch and the K. & A. V. Division, rates from Memphis would be published the same number of cents per hundred pounds higher than the local state rates from Little Rock to destination, as the rate from St. Louis was higher than the rate from Memphis to Little Rock, or the following figures in cents per hundred pounds." (R. 1628.)

Then follow the figures in cents per hundred pounds. That differential is 30 cents on first class, 25 cents on second class, 20 cents on third class, etc., between St. Louis and Memphis. He says:

"With the further provision that the rates from Memphis to Little Rock would apply as minimum figures."

The point is just this: The rates from Memphis to Little Rock were applied in those cases because of that provision in regard to the minimum.

Mr. Perkins further says:

"To illustrate this basis we will check the adjustment at Gum Springs, 70 miles south of Little Rock (that is one point mentioned in the exhibit).

"The first class rate under the Commission's tariff is 40 cents, adding the differential (between Memphis and St. Louis rates) for first class mentioned, namely, 30 cents, produces the rate as shown in the chart, or 70 cents.

"Second Class—The rate from Little Rock is 35 cents plus second class differential of 25 cents, or through rate of 60 cents.

"Third Class—Local rate from Little Rock is 31 cents, plus differential of 20 cents, or 51 cents, and so on down through the entire list.

"In cases where the interstate rates are shown to be the same to the points mentioned in the chart the Memphis to Little Rock rate has been applied as a minimum, these minimum figures applying only to the stations directly south and west of Little Rock, which it will be seen were selected by the State to disprove our basis. Gum Springs is the most southerly point to which it applies. That is the most southerly point at which any of the rates apply on that basis. All of the rates are not blanketed even as far as Gum Springs." (R. 1629.)

That chart covers a distance of 148 miles from Asylum, but the real point of difference is from Little Rock to Gum Springs. The rate from Memphis to Little Rock plus the differential is the maximum that could be charged on those shipments, because that is the charge which in the agreement between the Iron Mountain Railroad and the city of Memphis was to control as a minimum charge and they can not go above that. For that reason that rate will apply to Little Rock and all the way down to Gum Springs

and that holds the rate level from Little Rock to Gum Springs. They are comparing it there with rates for the same distance, but the territory that really is covered by that is the territory from Little Rock to Gum Springs on the Iron Mountain Railroad. It was caused under the arrangement that they could not charge a greater rate from Memphis to that point than the Memphis rate to Little Rock plus the differential.

On November 9, 1908, some two months after the injunctions in these cases were issued, the railroad companies put in a new tariff of rates on commodities transported within the limits of the State. They also began immediately to readjust their interstate rates to conform to the change in the State's tariff. Mr. Flippen, the Traffic Manager of the Iron Mountain Railway, and the traffic officials of the St. Louis Southwestern Railway, testified that they began, immediately after, the November state tariff was put in, to readjust interstate rates, but considerable time elapsed before the effective date of the readjustment, on account of the difficulties of the compilation, the delay in publication, the checking of proof, and the notice required by the rules of the Interstate Commerce Commission; also negotiations with connecting carriers for their concurrence in the changes. (R. 238.) This witness and Mr. Watson and Mr. Bragg, all testified that the change in interstate rates was necessary in order to preserve the parity between the state and interstate rates. Mr. Flippen further testified that the increase in the interstate rates was from 15 to 20 per cent;

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that they could not be advanced proportionately with the state rates because the adjustment of the interstate rates, by reason of recent increases, was relatively higher than the rates within the State for equal commercial conditions and service. He and Mr. Bragg also testified that the railroads were forced to increase their rates in February, 1907, and again in September, 1908; that these increases in the interstate rates rendered a larger increase than that mentioned by Mr. Flippen in the state rates unnecessary. (R. 263 and 840.)

The State sought to impeach the correctness of this evidence by exhibits "G" and "A," filed at their request by Mr. Kimbell, Assistant Auditor of the St. Louis Southwestern Railway.

Exhibit "G" showed an increase of 96.01 per cent in the intrastate revenue in January, 1909, as compared with the last six months of 1907. Exhibit "A" showed an increase in revenue per ton per mile during the same periods of 96 per cent in state business and between 9 and 10 per cent in interstate business. These exhibits were filed on the theory that the increased revenue was based on the increase in rates, which was incorrect. Mr. Kimbell explained in his evidence at the time that the variation in revenue did not follow variation in rates, but grew largely out of the shifting of commodities carried at different times and changes in conditions affecting traffic, rates being only one of the factors. Exhibit 58 filed by him shows that the increase in revenue in January, 1909, on the application of

the rates in force in the latter half of 1907 to the intrastate business of 1909, would have been 48.18 per cent. This exhibit is accompanied by the following explanatory note:

"Exhibit 'G,' filed at the request of Judge Hill, assumed an increase of 96.1 per cent in the intrastate freight revenue for six months ending December 31, 1907, based on that percentage of increase in the average intrastate revenue per ton per mile, for January, 1909, over a like average for the six months named."

"Testimony has heretofore been given in this case to show that an increase in the average revenue per ton per mile is not absolute evidence of an increase in the rates; that this average could change materially, due to shifting in the character of tonnage handled, without any change whatever in the rates, and that there was a material change in the character of tonnage handled in January, 1909, as compared with the six months ending December 31, 1907.

"The correct way to determine the percentage of increase in revenue for the six months ending December 31, 1907, had the rates in effect in January, 1909, been in effect during those six months, would be to apply the latter rates to the actual movement for the six months' period and figure the increase in the revenue so obtained over the actual revenue.

"On account of the magnitude of the task this has not been done. However, under the order of this court this company is keeping a record of amounts collected under the current freight and passenger tariffs, pending a decision in this case, and by applying the inhibited rates to the actual movement for each month, we are able to arrive at the actual revenue increase and the percentage of increase under the current over the inhibited rates.

"It will be noted that for the month of January, 1909, the percentage of increase is 48.18 per cent, or about one-half the percentage which Judge Hill requested exhibit 'G' be based upon. Even this percentage is, no doubt, greater than the percentage would be, based on an application of

the railroad rates, to the actual movement for the six months ending December 31, 1907." (R. 2078.)

A similar exhibit for the Iron Mountain Railroad was filed by Mr. Johnson. (See exhibit 54 and his evidence.) (R. 2000, 2001.)

In this connection Mr. Kimbell testified:

"Since this question was raised by Judge Hill a few weeks ago I have investigated in a general way the character of the principal commodities handled during the two periods referred to and find these important changes in the commodity movement, which would under any set of rates have the effect of increasing the average revenue per ton per mile:

"Coal, a low rate commodity, constitutes 5.5 per cent of the total state movement for the six months ending December 31, 1907, and but 1.02 per cent for January, 1909.

"Forest product material, another low rate commodity, constitutes 29.40 per cent for the six months ending December 31, 1907, and but 13.96 per cent for January, 1909.

"Now, on the other hand, the following important commodities which are rated higher than coal and forest product material show a proportionate increase in volume handled as follows:

"Grain and grain products for the six months, 3.87 per cent, and for January, 1909, 5.86 per cent.

"Hay, for the six months' period, 13.30 per cent, and for January, 1909, 18.56 per cent.

"Cotton seed products for the six months' period, 5.58 per cent, and for January, 1909, 15.67 per cent.

"This marked shifting in the character of tonnage handled would in itself make a radical change in the average revenue per ton per mile, even though there was no

change in the rates, and in my opinion accounts in a large measure for the difference in the averages of state business during the two periods.

"The length of haul of the differently rated classes and commodities is also an important factor to be considered in a comparison of this kind.

"Exhibit 35, which covers the six months' period, shows an average haul of 43 miles for state freight and 232 miles for interstate freight.

"Exhibit 'A,' which covers the month of January, 1909, shows an average haul of 41 miles for state and 222 miles for interstate freight.

"It is a recognized fact that as the haul increases the average revenue per ton per mile decreases. It is, therefore, to my mind, misleading to make a comparison of the average revenue per ton per mile for one period with another unless the character of tonnage carried and the haul for each kind of tonnage is identical." (R. 942, 943.)

The rate of increase in the interstate rates is explained by the testimony of Mr. Flippen and other witnesses referred to. It must be borne in mind that this comparison was made between January, immediately after the voluntary railroad rate had gone into effect, and before the adjustment of interstate rates could have been made effective. It was just beginning at that time. The delay was unavoidable, and is explained by Mr. Flippen in his testimony cited above, and it is apparent that the raise in interstate rates in February and September preceding the increase in the state rates, rendered a larger increase in interstate rates after the change had been made in the state rates unnecessary.

Mr. Kimbell was requested to file an exhibit based upon a hypothetical statement of earnings from state and interstate business and the total cost of producing a given revenue. He was asked to calculate the amount of expense chargeable to state and interstate business, respectively, on the revenue theory, on the assumed earnings, and then to further assume that the intrastate rates are increased $33\frac{1}{3}$ per cent without any increase in the interstate rates, and make the same calculation showing the amount of expense that would be chargeable to each class of business under the latter assumption. He did so, and filed the example as exhibit 23. The State sought to show by this that the revenue theory of division was impracticable because of the effect that would be produced by a change in one class of rates without a corresponding change in the other.

Such an example is not entitled to any force unless it is found to represent conditions that do or may exist. A number of witnesses were examined on that subject. Mr. Nay, an old accountant and traffic man, Mr. Kimbell and others all testified that such a condition was impossible, because it is contrary to all the principles upon which state and interstate rates are constructed. (See the evidence of R. E. Kimbell, R. 236; Nay, R. 656.) The State did not produce a single witness to the contrary, nor show a solitary instance, except their attempt to show a large increase in the ratio of intrastate over interstate earnings by a comparison of the revenues accruing between the six months ending December 31, 1907, and January, 1909,

growing out of the change in the intrastate rates following the granting of the injunctions in these cases; the explanation made by the traffic men not only destroys all the force of the illustration for that purpose, but supports the testimony of Nay, Kimbell, Johnson and others as to the practice in preserving parity of rates and the impracticability of a radical increase in state rates without a corresponding change in interstate rates.

But the most convincing evidence in the record on this point is certain tables prepared and filed by Hubert Roth, as a part of his testimony, containing a comparison between the percentage of the total revenue accruing from the handling of commodities and the percentage of total ton miles. Mr. Roth is clerk to the General Auditor of the Iron Mountain Railway. He is an expert accountant and statistician. The various commodities are graded in six groups according to character, loading, risk, damage, etc., the first group consists of that class of commodities which bears the highest rate. The second is the next lower grade and so on down through the six groups. The description of the groups gives sufficient information as to the classes of commodities upon which they are based. For instance, group one consists entirely of less than carload merchandise, which is the most expensive class of freight that is handled by the railroads. Group 2 represents carload commodities the loading of which is, on the average, light; many of them have the same characteristics of less than carloads, making them liable to loss, damage and subject to extra handling.

Group 3 represents commodities generally carried in light loads and on which the risk from loss and damage is less and which require no handling. It consists of hay, packing house products, etc. Group 4 represents the medium grade commodities, with little, if any, risk from loss and damage, such as salt, brick, lime, etc. Group 5 consist of lower grade commodities carried in heavy loads with little, if any, risk from loss and damage, consisting of lumber, brick, salt, lime and cement.

Group 6 represents the lowest grade commodities and the cheapest to handle, cars loaded to full capacity, several cars usually moving together and at times in train loads. It includes coal, ore, sand, stone and gravel.

The following table, based upon the aforesaid grouping, shows the percentages of tons one mile and revenue on the Missouri Pacific System and Iron Mountain Railway in the State of Arkansas for the calendar year, 1909. Mr. Roth stated that he was unable to make the comparison between the intrastate traffic on the Iron Mountain in the State of Arkansas with the interstate traffic in the State or on the Iron Mountain system, because he did not have the figures and could not obtain them without a very great deal of labor. He was, however, able to obtain the percents of tonnage and revenue on the Missouri-Pacific System and also within the State of Arkansas. We do not regard the fact that the Missouri-Pacific System, which includes the St. Louis, Iron Mountain & Southern Railway, is used as material in determining the difference in expense

of handling, and that is what creates the difference between the commodities as they are grouped. It is as fair to take the entire line as the Iron Mountain alone for the purpose of comparison, because the same conditions precisely, in regard to the effect of classification, apply to the one as to the other. It would be the same with the Great Northern or any other system of roads, for it is a general and broad proposition that the cost of handling commodities is influenced more largely by this classification of carload and less than carload than by any other consideration, and you have the same relation between carload and less than carload, whether the traffic is dense or light. It is a matter of relation. Relatively speaking, the Pennsylvania Railroad has the same difference between carload and less than carload in the cost of handling. For instance, it will be conceded that the same conditions exist as between brick and stone and basket and fragile glassware on the Missouri-Pacific System as on the Iron Mountain. Such conditions exist everywhere. They are general, underlying conditions that apply on every railroad.

*Percentage of Tons One Mile.
Calendar Year, 1909.*

	Mo. Pac. & I. M. & S. System. Tons 1 Mile. Revenue.	Arkansas Intrastate. Tons 1 Mile. Revenue.
No. 1.....	4.61	19.12
No. 2.....	16.20	21.12
No. 3.....	4.24	4.92
No. 4.....	14.77	12.53
No. 5.....	35.80	25.94
No. 6.....	24.38	16.37
	—	—
	100.00	100.00
	—	—
	100.00	100.00

The table shows (1) that the proportion of the revenue per ton mile diminishes in proportion as the grade of the commodities embraced in the different groups is lower, as it should do according to the testimony of the railroad traffic men. The reason is that it costs more to move and handle the commodities embraced in the higher than in the lower groups. It shows how evenly the revenue derived from the rates applied to the classification of the Western Classification Committee runs with the classification made by that committee. (2) It shows that the same relation that exists on the Missouri-Pacific System as between ton miles and revenue is found in the intrastate movement in the State of Arkansas. The difference on the interstate traffic is greater. That is accounted for by the difference in the length of the haul. The average haul on the Missouri-Pacific System is very much longer than on the intrastate haul in Arkansas. (3) It further shows a parity between intrastate and interstate rates by the relation shown between the ton miles of the several groups of commodities handled and the revenue derived therefrom as between the Missouri-Pacific System and the Arkansas intrastate business. The ratios between the ton miles and revenue accruing therefrom are preserved to a large extent as between the two classes of business. It is particularly observable that the higher grade commodities yield the higher revenue in both state and interstate traffic. (See the evidence of Mr. Roth, Record 1977.)

In connection with the above is another table which gives all the principal commodities transported, and devel-

ops facts that are very significant in this connection. Grain, for instance, is 13.43 per cent of the total tons one mile. The revenue produced from that commodity on the Missouri-Pacific System is 11.15 per cent. Lumber is 29.94 per cent in tonnage and 21.14 in revenue. Cotton, which it is shown is much more expensive to handle than grain or lumber, which are among the lower grade commodities, is 1.03 per cent in tonnage and 2.43 per cent in revenue. Merchandise, which is the highest grade in point of cost of handling, is 4.61 per cent of tonnage and 19.12 per cent in revenue. (R. 1979.) These differences in the relation of tonnage to revenue grow out of the difference in cost of handling the several commodities, and we submit demonstrates the correctness of our contention that there is a relation between the cost of performing the service incident to the different commodities and the rates that are paid for the service. The result is reflected in the comparisons contained in the tables. Many other commodities are included in the last table referred to, but those we have mentioned are sufficient to show their effect. The comparison is based on statistics for the year 1909, because those for the year 1907 were not accessible, but the effect is the same without regard to the period of time covered by the comparison.

The court used various bases of dividing expenses between the two classes of traffic. The result of the findings on the bases adopted by the court was, however, practically the same as if our views had been followed. The appellee

lants having themselves propounded many of the theories upon which the court acted in making the division and determining the expense of intrastate business, are not in an attitude to question its correctness. If it is erroneous it is invited error, and they are within the rule which precludes a party from taking advantage of an error induced by his own action. Elevated Railroad Co. v. National Bank, 135 U. S. 432; Water Works Co. v. Barret, 103 U. S. 516; Railroad Company v. Estill, 147 U. S. 591.

On the other hand, if this court should find error in the views by which the circuit court was guided and should take the view that the revenue was the proper unit of division of expenses between the two classes of business, then we submit that the decree should be affirmed on the showing made by the railroad companies, under the rule that a judgment will not be reversed on the ground that it was based upon a wrong view if it can be sustained and affirmed by the application of correct rules.

"A just judgment, which is warranted by the record and facts, will not be reversed because it was based on a wrong reason." Smiley v. Barker, 83 F. 684, affirmed in 169 U. S. 736.

**THE STATE'S BASIS IS AN ARTIFICIAL BLENDING OF
ENGINE MILES, CAR MILES, TRAIN MILES AND
TON MILES. IT IS BASED ON ARBITRARY ASSUMPTIONS
THAT ARE INCAPABLE OF PROOF AND FOREIGN TO ALL KNOWN RULES AND PRACTICE IN
RAILROAD OPERATION OR ACCOUNTING.**

The State filed certain exhibits containing formulas for dividing the expense of conducting traffic between state and interstate business.

They accept as correct the railroads' assignment of the amount of expense properly chargeable to the State of Arkansas, except the expense at Memphis and at Fort Smith, and the items of legal expense already mentioned; they also accept the amounts reported under the various operating expense accounts prescribed by the Interstate Commerce Commission and the division of those expenses between the freight and passenger traffic.

They first assume that it is competent to divide the expense of operating local and through freight trains, and when they have done that and ascertained the relative cost of those two classes of trains, they attempt to ascertain the amount of state and interstate freight carried on each class of trains and divide the train cost between state and interstate on the basis of the relative amount of ton miles of each class of freight on each class of trains.

This is an outline in short of the mode they have adopted.

One of the prime and unanswerable objections to their scheme is that it is impracticable, as the railroad operating men have testified in this case, to make the division between trains on the basis attempted by the State.

If that could be done, another difficulty is met right at the threshold; that is, that it is necessary to ascertain how much freight was carried on local trains, and how much on through trains, in the six months in controversy, before they could make an apportionment between state and interstate business.

Recognizing the necessity, they attempted to do it in this way: They took the month of October, 1907, and an exhibit made by Mr. Johnson at the request of the State and filed in this case as exhibit 26, that contained, among other things, a statement of the tonnage and ton miles taken into the auditor's revenue accounts in the month of October, 1907. It did not separate it between local and through trains, but contained simply the aggregate amount of freight carried in the accounts for that month.

They next obtained what is called the wheel reports of all local trains—not of the through trains, but only the local trains—that operated in the State during that month.

The wheel report is the record kept by the conductor as he goes along from station to station, of the cars he picks up; he gives the car numbers and where picked up and where left off, and all that sort of thing. It is intended to be a sort of rough history of the cars handled on the train,

and may be taken to be reasonably correct. Of course, they may contain mistakes, and we think they do. They contain also the loading of the cars among other things.

Then they got the waybills covering all shipments that moved on local trains during the month. That gave them pretty correct information as to the movement of freight on local trains in the State in the month of October, 1907.

When they had gotten that together (and it took them four or five months to work up the one month, which gives an idea of the magnitude of the task), they wanted to know what the movement on the through trains was. To ascertain that they simply deducted the amount they found was carried on local trains from the total shown on exhibit 26. They said, that is the freight that was carried on the through trains.

Now it is important right here to pause and see to what extent the information contained in exhibit 26 should be relied upon for that purpose, because upon that depends everything so far as the attempted division by the State is concerned.

The total freight taken into the accounts in that month, as shown in exhibit 26, does not represent the actual movement of freight on trains in the State of Arkansas during the month.

The accounts of the railroad company do not and could not have shown how much freight was handled on trains, local and through, in the State of Arkansas in the month of

October, and the company's accountants could not obtain that information without devoting the same relative amount of time to the investigation for each of the six months, as the State gave to the investigation of the local trains for one month, and then as much more as would have been necessary to work out the very much larger proportion of freight carried on through trains, for the same period, in the manner the State worked it out as to the local trains for one month.

It could not be ascertained, because no account is kept of such matters.

The Iron Mountain Railroad is a part of a large system which operates in eight States. The accounts from which exhibit 26 was compiled are made up in this way:

(1) Freight originating on the Missouri-Pacific System lines and destined to points on that system, including the Iron Mountain Railway, is taken into account as of the date it is received at the station where it is taken in charge by the railroad company.

Now, freight received in Kansas or Colorado, or Nebraska, in the month of September, or in the month of August, might be, and the testimony of Mr. Nay and others shows is frequently delayed; just the natural delays incident to rail transportation might cause that freight to move in or through Arkansas in October, and yet it would be entered in the auditor's accounts of September or August, the month in which it was received by the railroad company

at a distant station in another State, and not be taken into account in the month of October, or represented in exhibit 26 in this case.

(2) All freight which is received on the Missouri-Pacific System lines and billed to points on other lines of railroad, is taken into account in the same manner; that is to say, at the time it is received for shipment.

Suppose a shipment should be received in Kansas or Nebraska or Missouri, destined to a point in Arkansas or Louisiana, off the line of the Missouri-Pacific System, and that occurs every day. It goes into the auditor's accounts as of the date it is received at the station where it originates. For instance, if it is received at Pueblo in September, it goes into the accounts of the auditor as of that date, regardless of when it moved in Arkansas, or when it arrived at destination, and necessarily so, for the tonnage and revenue must be handled in a uniform manner, and it is impossible to divide the revenue from each shipment between months on the basis of its movement in trains over approximately seven thousand miles of road. In order to know whether a shipment that moved over the line in Arkansas in October entered into the accounts, you would have to trace it back and see if it was received in October. If it was received in September or some other previous month, it would not enter into the accounts for October.

Or, take it, the other way. It might be received in October and not move until a later period, a later month.

(3) There is another kind of business called "Interline received;" that is, freight received from other lines. That is taken into account at the time it is reported at destination. If a shipment is made from Chicago to a point on the Missouri-Pacific System, say Kansas City or Little Rock, it gets into the auditor's account at the time it is received at destination.

Another class of business handled by the railroad company is what is called "Interline Through" business, originating, say at Chicago, destined to Galveston or San Francisco via the Missouri Pacific Iron Mountain lines, the Iron Mountain being merely an intermediate carrier. This class of business is taken into account when reported by the agent at final destination; in other words, when reported by the agent at Galveston or San Francisco; all of these classes representing more than three hundred and fifty thousand separate and distinct consignments per month.

Thus, it will be seen what wide scope for error the taking of this account as representative of a month's physical movement affords, when it is borne in mind that 51 per cent of the ton mileage in Arkansas is trans-state freight, and not more than 11 per cent of the total ton miles, according to the State's figures, is carried on local trains. There might be large quantities of freight moved in October which would not reach Texas or California or Louisiana or Arizona, or freight that originated in those States that did not reach Nebraska, Missouri, or the States north, until November or December. None of that movement got into exhibit 26.

They did get the actual movement of the local trains, but did not in any manner get the movement of the through trains, and that is nearly all interstate freight. So there is a large amount of interstate freight that is left off on this through train movement, because it moves on the through trains almost altogether.

The details of the October movement of freight worked out by the State's accountants is contained in exhibit I, filed by Mr. Wharton, which is based upon exhibit 26, as explained in the foregoing statement. Having separated the freight carried on the two classes of trains to their satisfaction, they assume that that month correctly represented the six months' period, and used certain arbitrary bases, confessedly adopted without any investigation except such as the accountants who prepared the formulas were able to make, to segregate and divide all train cost as between local and through trains, and then apportioned the cost of each class of trains to the state and interstate freight carried thereon on the basis of the ton miles. Transportation expense was also divided on arbitrary allowances for extra cost made here and there, and based wholly upon the views of the accountants and persons whom they say they consulted, but who were not witnesses and whose names were not even given by them.

After they had ascertained the cost of local and through trains for the six months' period, and the ton miles of state and interstate freight carried on local and through trains, in the manner indicated, for one month, they applied the per-

centages of the ton miles thus obtained to the total ton miles for the six months' period to determine the number of ton miles of each class of freight on each class of trains and apportioned the train cost of each class of trains between the State and interstate freight carried on them respectively in proportion to the ton miles of each (exhibit K, p. 78). This assumes that the relative proportion of state and interstate freight on local and through trains is exactly the same for each of the six months, which is manifestly wrong for the reason that even in a normal period, the month of October is the heaviest month of the year for all southwestern roads, and especially so in this particular year on account of the congestion and abnormal use of the local trains.

The manner and the details of their division are contained in exhibit K. The statistics contained in exhibit I are the foundation of their schemes of division as between state and interstate freight. If that month is not representative, or if the statistics of operation as used by them for that month are incorrect, or if the arbitrary assumptions upon which they proceeded in making their division of train and transportation cost, or any or either of them, are incorrect, the results shown in their exhibits can not be correct and the relation of cost obtained in that way would be worthless. The correct application of their scheme of division, therefore, depends upon whether the bases and the numerous hypotheses upon which they acted in its preparation are correct.

It is a remarkable fact that not a single witness who had had any experience in railroad operation that would qualify him to pass upon the merit of their scheme of division was called. Their principal witnesses were public accountants, whose only experience in railroad accounting was such as they had acquired through the occasional examination of railroad records in their capacity as accountants. Mr. Hamilton, as we now recall, was the only man among their accountants who had had any experience in railroad service, and his experience was not such as to qualify him to pass upon the many radical assumptions made in the formulation of their plan. The scheme was devised by Mr. T. F. Wharton, the manager of the agency of Haskins & Sells, in St. Louis, who had been employed as a public accountant for about eight years, prior to which he was a printer and business manager in a newspaper office and city clerk of a small town in Wisconsin. During his employment as a public accountant he was principally engaged in checking accounts of various business and industrial concerns. The only work he had ever done involving railroad accounting was in connection with the Missouri and Arkansas Rate Cases, which are now pending in this court. He only had general charge of that work, however, and did not make any investigation in the offices of the companies, or give it close personal attention, and did not testify in the Missouri case. His first real work in connection with the cases was in May or June, preceding the time he testified, in the spring of 1910. He testified that he

devised the State's scheme of division; that the ideas originated with Mr. Hamilton and himself after reading the testimony in the Arkansas and Missouri cases, and particularly that of the operating men. He admitted that the division of expenses made by him was not based on any knowledge as to the actual operations of railroads, also that he was not prepared to be examined on the details of his scheme. He was asked if he felt that he was qualified to testify as to the manner in which the expense of operating railroads should be divided, and said that he was not, except from the point of view of an accountant. He was asked on cross examination if the division of expense between freight and passenger traffic which appeared in the exhibits filed by him was correct, and said that he would not care to pass a personal opinion on them because he had not studied it sufficiently to form an opinion as between freight and passenger traffic. That is the very basis and groundwork of any intelligent division of expense. He was asked if he could make an intelligent or satisfactory assignment of the expense of either freight or passenger traffic as between the several branches or departments of each kind of traffic without having before him a correct statement of the total of each. He said he could approximately, but admitted that it was necessary to have the total cost of freight and passenger service before you could go into details, and finally said that he accepted the railroad company's division as between freight and passenger service, and that it was not necessary to give any particular consideration to a division between those two branches of the business.

Is it not remarkable that a person who undertakes to make a division which he claims is more nearly in accord with actual conditions than any other method, would not give it further thought? His testimony shows that at the very foundation of his work he is undertaking it without that investigation that a man who wanted to arrive at actual results should have made.

He was asked this question:

Q. "In adding 50 per cent to the engine mileage on local trains on account of station switching, did you make any distinction between that part of the traffic that was trans-state, and the other part?"

A. No, sir.

Q. Well, do you think there is any difference between the amount of switching done for trans-state and interstate freight?

A. I couldn't say as to that on local trains.

Q. What is your opinion about that?

A. I wouldn't express any; I have none as to that."

Here is a very important element of division that is made upon an arbitrary assumption, and the man who originated it says he knows nothing about it and has no opinion about it. He was asked:

"Q. Wasn't that a very important feature to know?

A. Not as I understand between local and through train service—no, sir.

Q. Now, let me see; I don't mean to make a difference just now between local and through trains; I mean when you come to divide expense like the difference between state freight and interstate freight. Wouldn't it cut a figure then?

A. It would in the final division between state and interstate.

Q. Did you make any allowance or give any attention to that in making your final division between state and interstate after you had apportioned the expense to local and through trains?

A. No, sir.

Q. So if there was any distinction it was not taken into your statement?

A. If there was any distinction, it was not taken into consideration."

In connection with his division of the expense of "Maintenance of way and structures," which is the largest item of train cost, he was asked why he added 50 per cent to the engine mileage of local trains on account of station switching. His answer was:

"That percentage was worked up after consultation with Mr. Hamilton and others, and was simply an arbitrary percentage added.

Q. You have no qualifying knowledge or information?

A. Except such as I have just stated, discussing the matter with Mr. Hamilton and others.

Q. You don't know whether 50 per cent or some other figure should be added?

A. No, sir.

Q. Then you added 150 per cent for each engine mile to make it equal a car mile? Why did you do that?

A. We added 150 per cent to each engine mile also after consultation with Mr. Hamilton and others as representing the difference in the weight of the engine and the cars.

Q. Did you weigh an engine and car for the purpose of ascertaining from actual weight what the difference was?

A. No, sir.

Q. Then what reasons were given in your consultations for adopting that per cent? I ask this because it is the foundation of your figures.

A. Well, if hearsay testimony is not competent, I would not be able to say.

Q. So you are unable to make an explanation?

A. Except upon information I gathered from consultation with men who were qualified to pass on that."

We give this as an example of the character of his testimony as to the division, and the arbitrary assumptions contained in the exhibit. (See R. 1033-1036.)

We have dwelt somewhat on Mr. Wharton's testimony as to his knowledge and qualification because he is put forward as the originator of the scheme of division developed in the State's exhibits.

The plaintiffs, for the purpose of determining the feasibility of the State's scheme and the correctness of the assumptions on which it was worked out in its several parts and details, took the testimony of a number of witnesses who it was thought, from their experience in operating rail-

roads and in connection with railroad accounting, would be qualified to form opinions based on knowledge, and thus to pass intelligently upon the scheme in its entirety and in detail.

Mr. Carl Gray, Senior Vice President and General Manager of the St. Louis & San Francisco Railroad Company, who had had large experience in operating railroads in Missouri, Arkansas and Texas, Mr. F. E. Ward, who from 1898 to 1907 was the General Superintendent and General Manager of the Great Northern Railroad System, and was at the time he testified General Manager of the Chicago, Burlington & Quincy Railroad Company, Mr. Frank Nay, Comptroller of the Chicago, Rock Island & Pacific Railway, who was in the service of the Missouri-Pacific and the St. Louis Southwestern railways in various capacities in connection with statistics, freight accounts and as traveling auditor, and with the Minneapolis & St. Louis and Chicago, Rock Island & Pacific Railway systems as auditor and comptroller, who testified that he had studied operating conditions on railroads in connection with his duties in the auditing department, Mr. F. P. Johnson, who had served for 21 years in the auditing department of the St. Louis, Iron Mountain & Southern Railway and the Missouri-Pacific System, and for nine years had been in charge of operating statistics, were examined. All these men are eminent in their several departments of railroad service, and were qualified by their knowledge and experience, as the reading of their testimony will show, to pass upon the various matters involved in the State's scheme.

Mr. Ward testified as follows:

"In my opinion, such a method would not be accurate and reliable for the purpose of accomplishing the object sought. In the first place, the taking of any one month would not, in my opinion, be safe for determining so important a thing as the cost of performing service, when it is to be used for determining the revenue of the company." (R. 1854.)

A number of witnesses testified you could not take the month of October or any one month, and apply those particular results to six months. That the conditions affecting the traffic were such that no one month could be applied to six months, for the purpose of effecting the distribution of expense as between state and interstate business.

Continuing, Mr. Ward testified:

"The months vary very greatly, one from the other. The month of October, on most railroads in the West, is a month of very heavy business.

"By reason of the difference in the method of taking record of the tonnage, part of it being taken from billing, and part from the date of receipt, there would be a very great opportunity for tonnage to be omitted that was actually carried in that month. Or, on the other hand, there might be a great deal of tonnage included in the figures which would not move at all on the rails of the company during that month. Therefore, the great uncertainty as to the accuracy of the tonnage would make the first grave doubt as to the accuracy of the method for computing the cost."

Q. "Would the incorrectness that would result from that method of ascertaining the relative proportion of freight carried on local and through trains be cured by the fact that the omissions and the inclusions to which you refer would occur from month to month and would be about the same in each month?"

A. It would not, in my opinion. I do not believe that any one month should be taken or could be taken as a basis upon which to determine an accurate computation. Any month might be a high one or it might be a low one, and if it should happen to be correct in any given case, it would be so purely by accident and not by reason of the inherent accuracy of the theory. No short period of a day, a week, or a month would be safe. They would all give opportunity for variations sufficient to destroy the value of the method as a means of determining the separation of cost.

Q. What effect, if any, would a change in the character of the tonnage have upon the correctness of that method of ascertaining the total tonnage?

A. By character of tonnage, do you mean the character.

Q. I mean the character of the business, and the character of the freight, and all the characteristics that enter into and form an element in determining whether the method of keeping accounts by the auditor would give a correct result.

A. A variation in the character of the business handled—that is, business of kinds that had different origins or destinations during that time—for instance, if, during the month that was used as the basis of these computations, there should be any material change in the class of business handled, there might be a very material opportunity for a variation in the time at which those tons would be recorded, and they might be omitted in that month, or other tonnage might be included. It would have a bearing on that same opportunity for inaccuracy." (R. 1854, 1855.)

It was shown that during the month of October, 1907, that there was a congestion of freight in this State and elsewhere, which had an effect upon the movement of freight. Freight was delayed very considerably in transit, and in the delivery all over the country by reason of it. The attention of Mr. Ward was called to that condition:

Q. "What effect would congestion during the period that is covered by this investigation and during the month, or a congestion which was at its height during the month selected as a representative month, and in which the relative tonnage is sought to be determined in the manner I have described, have?

A. If congestion existed in the State of Arkansas during the month that was used in this theory, undoubtedly the same congestion existed in States outside of Arkansas" (and that is shown by the evidence) "on lines connecting with the lines that are being considered here. That would mean in any such period of congestion the business would all move more slowly than at a time when business was being handled in a normal way. That would mean that business would be delayed outside of the State and inside of the State, and the margin for such inaccuracies would be greater. There would be a greater spread between the tonnage actually moved in that month and the tonnage that was recorded by the method described.

Q. Would such a condition have a tendency to change the proportions of tonnage carried by the two classes of trains mentioned; that is, the local and through trains?

A. Yes, sir; it would, for this reason, among others: That in a time of congestion, when a railroad is hard-pressed to move its business and keep its terminals clear, it would use to the fullest possible extent the capacity of the engines on its local trains, and the proportion of long haul, or interstate business, handled on its local trains would increase during such a time. And the local trains being ordinarily such light trains, the addition of comparatively few cars to their makeup would materially alter the percentage of given tonnage that was carried in those trains.

Q. What do you think of the practicability of apportioning the expense of interstate and intrastate traffic by separating and ascertaining the cost of operation of through and local trains, as the State has done in exhibit K?

A. I have given the matter of finding an accurate method of dividing that cost considerable thought, and have heretofore expressed myself as being of the opinion that

there was not any practicable way of determining it by any mathematical calculations or any exact method; and I am now of the same opinion. I do not think the State has yet solved the problem. I think the plan outlined in exhibit K is not a practicable one.

Q. In introducing this scheme of division, the State assumes that it has presented a method which is not based upon theory, but upon actual conditions; and they advance it here as an apportionment based on actual facts. In that view, what is your opinion of its merits as presenting a division based either actually or approximately on facts?

A. As I read the State's exhibit K, the basis used is one that is not based upon facts, but to a very large extent upon assumptions of facts which, in my opinion, have no proper basis in fact. My idea of the office of an accountant is that he should record accurately things that occur, and not undertake to formulate theories to prove one thing and another. It would be quite possible, by not very serious modifications of this particular theory, to make a very wide variation in the results that would be obtained from it." (R. 1855, 1856.)

There is other testimony in the case which establishes clearly and beyond reasonable controversy, that the apportionment which has been made of state and interstate freight between the two classes of trains, in the method adopted and followed by the State, is incorrect.

It will be observed that all the witnesses who have testified in the case, and they are men who have been engaged all their lives in railroad operation, and who ought to know about these problems if anybody could, have testified that the larger amount of the State freight is carried on the local trains. We have heard that from all the witnesses. And yet the State produces an exhibit here, made up partly from exhibit 26, which shows that 61 per cent of the intrastate

ton mileage was on the through trains and 39 per cent on local trains. That is contrary to the testimony of all the operating men in this case.

A test was made on the St. Louis & Southwestern Railroad just one year later, that is in October, 1908, when conditions affecting traffic were normal, and that test showed that the relation was just the reverse; in other words, 22 per cent of the state freight was carried on through trains and 78 per cent on local trains. We could not understand how these conditions were reversed, until we came to look into it and understand how those accounts were made up, and until the effect of the congestion referred to was explained by the operating officials in charge at the time.

Mr. Cannon, who is a superintendent of the Iron Mountain Railway, came to the State and gave his personal attention to the conditions caused by that congestion. He testified that when the movement of freight became congested it was necessary to utilize every possible means of moving the freight and getting it out, particularly the inter-state and trans-state freight going beyond the terminal points; that in order to accomplish this they loaded the interstate freight on the local trains at the terminal points, to the full capacity of the engines to pull it. (R. 1795, 1796.) Mr. Ward's and Mr. Gray's testimony as to the general practice under such conditions corroborates his statements.

There is, under normal conditions, a great difference in the make-up of local and through trains. The local train

does not haul half the tonnage the through train does. But under these circumstances, this congestion existing, they loaded the local trains to their full capacity; Mr. Cannon testified that they loaded thousands of tons of freight on the local trains each day, in order to move it. The yardmaster at Little Rock testified to the same thing.

Mr. Cannon was asked, without any knowledge of the State's exhibit I, what he thought the relation of state and interstate freight on local trains during that month, growing out of that congestion, was. He answered that he expected it would show that 75 per cent of the freight was interstate. He was asked how it would be normally, outside of that congestion, and he said, "Just the reverse." Mr. Brown, who was the assistant yardmaster at Little Rock, said practically the same thing—his figure, instead of 70, was 65 per cent. (R. 1798, 1806.) These conditions destroy the value of the methods pursued by the State.

Now, let us trace that a little further. If it took four or five months to ascertain the actual freight hauled on local trains for one month, which was 11 per cent of the tonnage, how much time would it have taken to go through and ascertain the tonnage carried on the through trains, for that month, and the tonnage on both classes of trains for the other five months? It was practically impossible to do it.

Mr. Roth, an expert accountant employed by the Iron Mountain Railway, took 16 trains and ascertained from the waybills what freight was carried in them. The result of

his investigation is shown by the following extract from his testimony:

Q. "Mr. Roth, you are familiar with exhibit 26, filed on the part of the railroads, and with exhibit I, filed on the part of the State in this case?"

A. Yes, sir.

Q. The first exhibit referred to covers all freight taken into the account of the Iron Mountain road for the month of October, 1907: Have you made any investigation of the local trains that ran during October, 1907, for the purpose of ascertaining whether there was any freight hauled on those trains that was not included in the auditor's accounts, and in the statements contained in exhibit 26 and exhibit I?

A. Yes, sir; I made such an investigation.

Q. Please state what that investigation was and what it showed. First, how did you make it, and what did you investigate, what trains, and so on?

A. We investigated 16 trains in all, 13 of which were on the Arkansas Division; one westbound on the Memphis Division; one northbound on the Valley Division (that is from Monroe to McGehee), and one eastbound on the Central Division. We compared the State's detailed sheets with the waybills, and made corresponding sheets, in which we inserted the dates of the waybill as an index of the account that that particular freight would have gone into in auditing our accounts. We also made a notation if it was received at a period subsequent to the month of October. We found that all of the freight on those 16 trains, of the trans-state freight, about 30.5 per cent was not included in our October account, and about 15.5 per cent of the interstate was not included in our October account or our exhibit 26. Of the state freight, a fraction over 6 per cent was not included.

Q. As I understand you, those proportions you have mentioned of trans-state, interstate and state freight you found on those 16 trains, were not included in the auditor's accounts of freight handled in October, or in the statistics

on exhibit 26, and consequently not in totals of the State's exhibit I, which is based on the railroad's exhibit 26?

A. That is correct.

Q. You investigated about one-third of the local trains for October?

A. Yes, sir; about one-third.

Q. Why did you not extend your investigation over the entire 46?

A. It would have taken too much time. I believe we could not have completed that under a year's work.

Q. So it was impracticable to extend it beyond the trains you did investigate?

A. Yes, sir; it was.

Q. Did you have any data from which to investigate the through trains?

A. No, sir; there was nothing in the shape of data which would enable us to do that.

Q. If the same conditions that developed on the 16 local trains you investigated in regard to freight not included in the auditor's accounts, had existed on the through trains, what would have been the amount of tonnage, actually handled in the month of October, omitted from the auditor's accounts and from exhibit 26?

A. There would have been a difference of about twenty-seven million ton miles.

Q. It would have swelled the tonnage for October about 27,000,000 ton miles?

A. Yes, sir.

Q. Where did you find the percentage of business not included on the trains you investigated was heaviest with

regard to the division or territory in which the trains operated?

A. We found it was heaviest on the trains nearest the borders of the State, and not so heavy on those running central in Arkansas.

Q. What effect, in your judgment, would that have upon the percentage which would have developed if you had been able to analyze the entire 46 trains?

A. I think if we had been able to analyze the 46 trains the three percentages I have mentioned would have been considerably increased." (R. 1973-5.)

(Mr. Roth filed exhibit 26, and testified that it was correctly taken from the records; when asked if it was a correct statement of the operations represented on the exhibit during the period covered by it, he stated he thought it as correct as figures of that kind could be. (R. 279.) We refer to this because of comments made by counsel at the hearing growing out of the fact that the exhibit was filed by this witness. The fact is that exhibit 26 was prepared in anticipation that it would be called for by the State; later a statement covering three months was called for at chambers, and it was agreed that a statement covering one month would answer the purpose, and it was in fact prepared and filed for the State's use. [F. P. Johnson, R. 1878.])

Mr. Carl Gray testified as follows:

He had examined the exhibits introduced by the State, and the method pursued by the Iron Mountain Railroad in keeping its revenue account.

"Predicated upon that, I would say that to subtract an absolutely determined amount from one which was not arrived at in any wise by the same manner, is entirely misleading, for the reason that the gross which is represented in the auditor's net ton miles includes business that may have been billed for some months before; certainly a very con-

siderable portion of it is billed the month before, and excludes a great deal of business that was actually handled in this month.

"That is such a variable quantity, varying as the proportion of the last two days may bear to the first two, that in my opinion it is unreliable.

Q. "Would the variations you speak of be cured by any equality in the lapses from month to month, and make it representative in that way?

A. It would not, as applied to any reasonably short period. It might, if applied to a five or ten-year period.

Q. I mean for one month, say the month of October.

A. One month as applied to what?

Q. To six months?

A. No, sir.

Q. Have you had any experience on your line of railroad that furnishes you with any information in that respect?

A. At one time, in endeavoring to provide statistics of value in determining the relative performance on the several divisions of the road, we took the ton miles from the auditor's reports. We found them to be unsatisfactory, for the reasons I have stated, and for the additional reason that the auditor assumes, naturally, that freight travels through a certain prescribed route.

"The operating department may not handle it via that route, for reasons that are good, and sufficient to them; such as interruption of the line or a more economical routing to a certain class of business, or a handling that would conserve time. Therefore, we were compelled, in order to have reliable statistics, to adopt the method by which we arrive at the net ton miles handled on any division of the road,

from the conductor's wheel reports, which represent actual conditions. And we have been satisfied with that.

Q. The tonnage handled on local trains on the Iron Mountain road during the month of October, 1907, in question here, appears to be only 11 per cent of the total tonnage: In that view about 89 per cent of the tonnage was ascertained in the manner I have indicated from the auditor's revenue accounts. What effect would that small proportion of located tonnage, so to speak, have? As between the two classes of trains, it would leave a very large margin for inaccuracy and incorrectness as to the other part of it, would it not?

A. It would add to the possibility and probability of that, in the greater proportion it bears to the amount accurately determined.

Q. What effect would a congestion of the business in October have upon the correctness or incorrectness of such a method of dividing the ton miles carried on those two classes of trains?

A. It would have this effect: It would distort those conditions which prevailed under a more normal situation. To make myself clear, in order to satisfactorily handle local business, the local freight trains running upon something like an established daylight schedule should handle the preponderance of that business. In time of congestion or stress that is of necessity lost sight of, and under those conditions, there can be no doubt that a greater proportion than normal of through business would find its place in the local trains.

Q. Why is that, Mr. Gray?

A. Well, you have a certain given amount of power, and it is human nature, if not good practice, under those circumstances to make it count just so far as you can; and in that case they would load down the local freight trains to the full efficiency of the engine, even in some instances knowing it would be very seriously delayed, and the service materially hampered, in an effort to get out from under. (R. 1895-1897.)

"From my knowledge of the conditions on all south-western railroads in October, 1907, I would say that in my opinion for a comparison of this kind, it would have been difficult to have selected a month in which the results would have been more misleading as applied to a longer period, for the reason that the congestion reached its flood during that month, and the conditions which were distorted by reason of the efforts of the operating department to move this unprecedented tonnage would reflect themselves through all of the remaining months, and the proportion of tonnage included which really did not move in that month, and the proportion of tonnage excluded which did move in that month, due to the auditor's method of keeping his ton miles, would equally distort and perhaps distort more greatly, all of the other months. (R. 1898.)

Q. What do you think of the merits of the plan adopted by the State's accountants for ascertaining and dividing the relative cost of handling interstate and intrastate business?

A. I feel it is an unsatisfactory basis for the reason that it is not a consistent theory. That is, not consistent in itself, in that it has used a number of varying methods. Those methods being the car mile, ton mile, arbitrary assumptions as to the relation between the locomotive mile and the car mile; and that it has applied over a six months' period a result determined upon in one month; and that result in itself, and in the nature of things, is an unsatisfactory one and an indefinite one. That at any point throughout its deductions, an error or a switch of the business in the other months would very materially affect the final result.

"That it is objectionable because it is difficult of understanding. It assumes conditions which, in practice, we are not able to verify. But above all, remains the fact that there is not a proper allowance that has been made for the relative cost of the two classes of business.

Q. Mr. Gray, speaking of this plan of separation from the standpoint of the State, as to the arbitrariness that have been allowed in these various subdivisions, if those arbitrariess were correct, and there was any way to arrive at

what division would be proper, and you could say these allowances would be proper in favor of the local trains, would that account for the excess cost of handling intrastate over interstate freight?

A. No, sir." (R. 1909, 1910.)

Mr. Nay testified in regard to the State's theory:

"My opinion is, that it does not reflect true conditions or true relative cost of the two kinds of service. After examining these exhibits carefully, I am unable to find any results—that is, any assignment of expense between local and through, or between state and interstate, that is an actual fact, or based on actual facts. The method subdivides the total operating expenses into various subdivisions, and treats of each subdivision separately.

"The expenses that are grouped in these subdivisions are divided on various bases, many of which have little or no relation to the expenses that are subdivided thereon. The method is complicated, and is capable of being adjusted in different ways throughout the details, that might bring entirely different results in different cases. The attempt is sought to divide what are termed train expenses between local and through, and those which are not train expenses between state and interstate. And then after the total local and through train expenses are ascertained, by a series of approximations, without any actual results being obtained, or without being based on any actual results, the entire expense of those trains is then apportioned between state and interstate on a ton mile basis, which is another approximation of this summary of approximations. It might or might not produce a fair result. If it did produce a fair result, I think it would be a coincidence or an accident. (R. 1814, 1815.)

"My understanding of the method used by the State's witnesses in ascertaining the state and interstate tonnage one mile on local and through trains is as follows:

"They took the conductor's reports, commonly known as 'wheel reports,' of all the local trains that were run during the month of October, 1907, and drew from those wheel

reports the numbers of the loaded cars. They then traced from those car numbers the waybills covering as many as they could find. I understand they were unable to find all of the waybills covering those cars. After locating the waybills, the separation was then made between state and inter-state shipments, and the tons one mile, state and interstate, were computed for car load freight only. I understand that all of the less than carload freight was considered to be state business; that is, less than carload freight that was hauled on local trains.

"Having obtained those results, which purported to show state and interstate tons one mile, transported on local trains in October, 1907, they deducted those results from the total tons one mile for October, 1907, state and interstate, as compiled by the railroad company. What was left was assumed to be the tons one mile, state and interstate, that were transported on through trains.

"However, the total tons one mile for the month of October, 1907, as computed by the railroad companies covers only shipments that were taken into the accounts of the companies in October, 1907, regardless of whether the shipments actually moved over the rails in that month or at some other time. I do not think a correct result can be reached by that method for the reason that the business of the company is not taken into account according to when it actually moved in the trains, but is taken into account as follows:

"System business, which covers shipments moving between points on the Missouri-Pacific System (including the Iron Mountain), is taken into account on what is known as the 'forwarded basis'; that is, all system waybills dated in the month of October, 1907, were taken into account for that month regardless of whether the shipments were actually hauled on the trains in that month or not.

"Under that plan system waybills dated during the latter part of October, 1907, and which started to move in October, but finished their journey in November, 1907, would be taken into account by the company in October for the full journey. But the State's accountants in compiling the tons one mile (on local trains), from the local con-

ductor's wheel report, would include only that portion of the journey that actually moved in October.

"The same condition prevailed at the beginning of the month. That is to say, the waybills dated during the last few days of September, 1907, which were en route at the end of the month, were taken into account by the companies for the full journey in September, 1907; while the State's accountants would have in their reports for October the ton miles covering the completion of the journey in October. The railroad's figures would include nothing whatever in October accounts covering such shipments.

Q. "The result would be, if a shipment was made and billed in Missouri or Nebraska or Oklahoma, in October, 1907, it would go in the auditor's accounts as an October shipment, without regard to when it passed through the State of Arkansas?

A. Yes, sir; if the waybill is dated in October. If a waybill on any part of the system covering the several States, is dated in August or September, it would go into the auditor's accounts as of August or September as the case might be."

"The interline business represents business covered by waybills reading to or from points on other railroads, and is divided into three classes: Interline forwarded, interline received, and interline through or overhead.

"The interline received business covers waybills made by other railroads reading to stations on the Missouri-Pacific System, and is taken into account when such waybills are reported by the agent at destination.

"In that way waybills which reach destination during the early part of October, which travel part of their journey over the Iron Mountain in the month of September, would be included in the company's tons one mile, but that portion of their journey which was traveled in September would be excluded from the figures compiled by the witnesses for State.

Q. "Suppose a shipment which passed through Arkansas in the month of October was received in Texas or Louisiana in November or even in December. In what month would it be entered in the auditor's accounts?"

A. It would be entered on the auditor's account in either November or December, according to when the shipment reached destination." (R. 1816, 1818.)

"And, furthermore, if that shipment, or any shipment of like character moved part of the distance on through trains across Arkansas, and part of the distance on local trains, the State's witnesses would have entered the figures only for the mileage that actually moved on the local train and would omit the mileage moved on the through train.

"The next class of interline business is known as 'interline forwarded,' covering shipments that are waybilled at stations on the Missouri-Pacific System going to points off that line and on some other railroad. The waybills for such shipments are taken into account by railroads when they are reported by the destination carrier, and the destination carrier reports them when the agent at destination reports the receipt of the shipment to his accounting department.

Q. "That may be weeks after it has passed through the State, may it not?"

A. It may be a long time. In actual railroad practice, I think every railroad in the country has a large number of waybills of that kind, which are being constantly traced. The Rock Island has several men tracing waybills that are not reported until some time after the close of the current month. In case there is a congestion, it sometimes happens that such waybills are reported several months after they have actually moved over the rails of the original carrier.

Q. What effect would a congestion in the traffic have in the way of delaying the entries in the book of the auditor of that class of shipments?

A. On all interline business, it would serve to increase the delay. The system business being taken up on a for-

warded basis, congestion would delay the actual movement. But on interline business, which is taken up by the receiving carrier, when it reaches its destination, any congestion delays the reporting of that business, and, consequently, the taking of it into account. This interline forwarded business is subject to perhaps the greatest delay of any (except perhaps the third kind of interline business, which is 'through' or 'overhead') because the company which originates the business has no control of when it is reported, and usually a large portion of the interline forwarded business of any carrier is not reported until after the close of the month in which it actually moved over the line."

"In this case waybills would be taken into account for October, 1907, which covered the actual movement in months prior, say in September or August, or even the months prior to August. While those shipments would not actually move in October, they would be omitted from the figures compiled by the State's witnesses, so far as the movement on local trains is concerned. Likewise, at the other end of the month a large amount of traffic would actually move in October, which would not be taken into the company's accounts until a subsequent month, but such shipments, if they moved on local trains, would be included in the figures compiled by the State's witnesses.

"The third class of business is the interline through, or overhead, covered by the waybills made at stations on other roads, which passes across or over the Missouri-Pacific, and has destination on some other road, the Missouri-Pacific being the intermediate road. This business is taken into account on a 'received' basis; that is, reported by the destination carrier in the same manner as the interline forward business."

Q. "In view of the conditions you have just described, can a correct division of the amount of freight carried on through classes of trains for a given length of time, say the month of October, 1907, be obtained in the way the State's witnesses have attempted to obtain it in this case?"

A. No, sir; I think not." (R. 1816-1820.)

"In arriving at the actual number of ton miles hauled on the through trains by deducting the tonnage actually hauled

on the local trains, from the company's figures, which were compiled without reference to the tons actually hauled, unless it should happen (and it would be a coincidence or accident), that those tons actually hauled should really agree with the tons taken into account as hauled on the local trains, the result left as to the tons on the through trains would be erroneous. It is scarcely conceivable that the number of tons actually hauled on the local trains in October, 1907, would be the same as the number of tons that were taken into account in October. I might add, that in my own experience on the Rock Island, we ran across this discrepancy several years ago in compiling operating statistics for our superintendents and general superintendents and operating men. We found that the so-called 'lapovers' from month to month did not equal each other—in fact, *they were entirely different, and were so very different as to distort our monthly averages.*

"Beginning with March, 1906, the Rock Island Railway has been computing the tons one mile used in connection with operating statistics for our operating men, from the conductor's wheel reports, thereby obtaining the tons actually hauled during the month over each division, because we were unable to obtain the tons actually hauled, from the waybill figures.

"We have made comparisons each month of the total tonnage one mile, ascertained from the conductor's wheel reports, and from the total tons one mile as compiled from the waybills, and they are quite different from month to month. *I think they will average a difference of ten per cent or more."*

Q. "From your experience in the effort you made on the Rock Island, do you think that the inequalities and defects in this system would be remedied by any uniformity in the 'lapovers'?"

A. No, sir; and certainly not for one month. The lapovers for one year when compared with the business for a whole year, have only one-twelfth of the effect they would have on the business for one month. Of course, it is evident to any one that the lapovers at the beginning of the

year will be the same as the lapovers for the first month of a year; and what I am trying to say is, that the effect of the lapovers when applied to the business of any one month, is very much greater than if applied to the business of a long period—say a year. That was the difficulty we had in our operating monthly statistics. In one month the tonnage that was omitted from our waybill account made the divisor into the expenses so small that the cost per ton mile was largely increased. Then the next month we would have tons in our account in excess of what was handled, and the reverse would be true—the expense would run away down.

"As those figures are used almost entirely for comparative purposes, the comparisons were destroyed on account of these lapovers being so unequal."

Q. "And you found it so impracticable that you abandoned it, did you?"

A. We abandoned it for our monthly operating statistics, by divisions, and ever since have been making those compilations, based on the tons actually hauled in the trains.

Q. What would you say of the month of October as compared with other months, as to its effect upon lapovers, considering the character of the business done in Arkansas in that month, and any changes made in the character of the commodities at that time from that which might have prevailed in the succeeding month?

A. I am familiar with traffic conditions on the Rock Island (in Arkansas), and presume in that period there was a similar condition as on the Iron Mountain.

Q. Are not the general conditions the same throughout the State as to the character of traffic affected by the change from the summer to the autumn business?

A. Yes, sir; I think that is true. I spent about 15 years on the Cotton Belt, and that was true on that road. And I know that on the Rock Island Road the October business is usually the heaviest of the entire twelve months.

Q. What effect would those conditions have upon the lapovers you speak of?

A. October being the heaviest month, there would be a greater congestion during that month, which would tend to emphasize these lapovers. I should say that no month is representative of any six months, or any twelve months, and, certainly, if I would choose a representative month, I would not choose the heaviest month in the year. An average month might be more nearly representative than either the heaviest or the lightest month, but I think where actual results are desired, no one month should be taken as representing the period." (R. 1820-1822.)

Mr. F. P. Johnson testified:

Q. "Will you state what you think of the correctness of the method adopted by the State for the purpose of ascertaining the tonnage carried on local and through trains in the month of October, 1907?

A. So far as the method used by the State is concerned in ascertaining the business handled by the local train, and then deducting those figures from the total figures shown by exhibit 26 (which was filed by the railroad), is concerned, I do not believe it is fair, and I do not believe it is a system which would be used by any railroad official. The figures compiled in exhibit 26, representing the total business for that month, are compiled from one source. The figures representing the movement of local trains are compiled from another source; the figures purporting to represent the local train movement are not figures that are included entirely in the total figures. I do not believe it is a fair assumption to make such deduction, or that correct information as to the relative tonnage carried on these trains could be ascertained in that way.

Q. It has been shown in that case that there is a large amount of tonnage moving in the month of October which is not included in the auditor's accounts for that month. Do you believe that omission could be accounted for or made up by any system of lapovers from month to month that might exist in the relation of auditor's accounts to the actual movement of the freight handled?

A. I have no idea how the lapovers from month to month will run. But in order to make this statement of any service we are compelled to assume that whatever business moved on the locals in the month of October, and did not get into our accounts, was offset exactly by the proportion of business that got into the accounts but did not move. That proportion must be exactly the same, *not only in volume as to ton miles, but as to commodities themselves.* It seems to me a violent assumption that the lapovers from September to October and October to November and November to December would be the same. To verify that would mean as much labor and time upon each of those months as was spent in compiling this exhibit I. It is a work which is practically impossible. I can not imagine how the lapovers could equalize mistakes of that sort, or rather the misleading effects of comparisons of that kind. (R. 1984.)

Q. Were you in any way connected with the Missouri Rate Case, and if so, state in what way?

A. I either compiled or was connected with the compilation of all of the exhibits that were furnished by the Missouri-Pacific Railway in that case. I attended all of the hearings before the master with the exception of one week at Chicago, and all of the hearings in the circuit court with the exception of one day.

Q. Mr. Wharton testified that the testimony in the Missouri case indicated that the main difference in the cost of state and interstate traffic was the cost of the local and the through trains. Is that your understanding of the testimony in that case, that the main difference was in the cost of local and through trains, to the exclusion of other elements of increased cost of state traffic?

A. No, sir; I think there were a number of reasons given for the extra cost of state freight as contributing very largely to that extra cost, in addition to the local train expense.

Q. Has the Iron Mountain Railroad ever made a practice of dividing expense of maintenance-of-way between local and through trains in such manner as has been adopted in this case?

A. No, sir; I do not remember any case where the Iron Mountain has ever had occasion or ever attempted to ascertain the cost of an individual freight train, whether it be local or a through train.

Q. What do you think of the State's method of dividing the expense of maintenance-of-way between local and through trains? If the separation had to be made, do you believe the manner adopted by them, the car mile basis, is proper from your standpoint as an accountant, and from your experience in railroad accounting?

A. I do not see that the basis adopted by the State, so far as the maintenance-of-way and structures is concerned, brings about any closer relation to the expense of those two classes than any other arbitrary method would, and I have no idea how the exact expense of either local or through trains or of one individual train, could possibly be ascertained with any degree of accuracy.

Q. You have heard the testimony in this case that a large proportion of the expense of maintenance-of-way and structures is not due to operation, but to other causes?

A. Yes, sir.

Q. In that view, do you think the method adopted by the State is a proper one?

A. No, sir; the larger the proportion of that class of expense that is due to the elements the less accurate would be any unit, either a car mile or a train mile, because, as has been stated by other witnesses, neither the train miles nor car miles would have any effect upon that class of expenses. It goes on regardless of the volume of business.

Q. It is more or less of an overhead expense than otherwise?

A. It seems so to me, and it is more of a general expense than any other item in the operating department. It is not a regular expense. By that I mean that the expense which is incurred this month is not taken into the account

this month or next month, or possibly not this year, and the traffic or the car movement has no bearing upon the amount of money which is taken into maintenance-of-way expense in the month in which the car movement is made." (R. 1986.)

Mr. W. B. Doddridge, an old railroad operating man, was examined by plaintiff during the production of their testimony in chief. Counsel for the State by way of anticipation (their method of division not having been developed at that time), tried very hard to force him into an approval of the method of division on the basis of train expense. Mr. Doddridge did not at the time understand the significance of the questions, but his views, as expressed in his answers, are in harmony with those of other operating men. The following are his statements on cross examination:

Q. "Your analysis of the different classes of freight, interstate and intrastate, is based on your experience and knowledge of the operation of the different kinds of trains, local and through, and the proportion of intrastate traffic carried on each, isn't it?"

A. Well, the local train is simply one of the incidents of the extra cost. It is not the whole reason. It is one of the circumstances and conditions of the handling of the short haul business of the railroad." (R. 484.)

At page 511, counsel asked him if, everything considered, a car mile basis would be fair between local and through trains, with reference to the expense of maintenance-and-equipment. He testified that a car mile basis, it seemed to him, would be very similar to the ton mile basis. (He had condemned as impracticable the ton mile basis.)

Q. "I don't suppose there would be any practical difference?"

A. It would be an average, and it would not take into account the extra handling. It would simply measure the miles. The mile would be the unit the same as the ton mile.

Q. If you take the car mile as the basis, would you add anything, and if so, how much for the local?

A. Yes, I would have to add this element of handling.

Q. I want to know how much you would add to that?

A. I believe that it is demonstrated in these statistics to be about ten to one. Take the average haul, the difference between the miles.

Q. We are taking the difference now, as I understand it, between local and through.

A. Take the difference in the mile in state and interstate freight; those are the only statistics we have.

Q. You are getting away from the question. As I understand it, we are now discussing the question between local and through, and you derive your intrastate and interstate by dividing the proportion on those. But the primary division must be the division between a local and a through train.

A. Judge, I do not know how to figure that out from the way you put the question. To ascertain the relative difference you would have to take the lengths of the haul; that is, the state and interstate haul."

Being further pressed, he said:

"I do not want to make any wild statements on that point unless I have the number of the relative handlings that the cars receive; then my judgment would be predicated on that. (R. 511, 512.)

The foregoing testimony shows that no one month can be taken as reflecting the business for the six months' period; that it is impracticable and misleading to attempt to ascertain the tonnage of each class of traffic on local and through trains by taking the tonnage actually handled on one class of trains and deducting that from the total amount taken into the auditor's accounts in order to ascertain the tonnage on that class of trains; that there was a congestion of freight in the month of October, 1907, in this and other States, which materially affected the loading of the local and through trains, and caused a very much larger proportion of interstate freight to be handled on local trains than is usual and customary. We will later on in this argument call attention more in detail to the testimony as to the effect of that condition on the proportion of state and interstate freight carried on local trains during the month of October. It has so distorted the relation as to the quantity of state and interstate freight carried on the two classes of trains in the figures prepared by the State as to produce a result just the reverse of natural and normal conditions, thereby greatly increasing the ratio of state freight and diminishing that of interstate freight carried on local trains in that month, which error was carried into the six months' period by applying the per cents obtained from the figures in October, thereby multiplying and increasing the effect of their mistake in a degree that is startling. These matters will be discussed when we come to consider the question of the state and interstate tonnage on local trains.

An exhibit (E-1), filed by the State, shows that the percentages of freight taken into the books of the St. Louis Southwestern Railway Company during the month of October, 1908, corresponded with the movement of state and interstate freight during that month. It was filed by Mr. Hamilton for the purpose of showing that the lapses from month to month equalized and corrected any difference that might exist between the auditor's revenue accounts and the actual tonnage. In order that the exhibit should have any force or bearing on the accounts of the Iron Mountain railway it was necessary for the State to show that the conditions on the two lines of road were similar. They not only failed to do that, but Mr. Hamilton himself testified, at page 1597 of the record, that a different system of keeping the revenue account of freight handled obtains on the St. Louis Southwestern from that used on the St. Louis, Iron Mountain Railway. He was asked:

Q. Do you know what system (of keeping the auditor's accounts of freight moved) is in vogue on the Cotton Belt System?

A. No, sir; not in detail. They have abandoned the antiquated freight journal system, which is still in vogue on the Iron Mountain, and are checking one agent against the other.

And again, at page 1595, he was asked if the St. Louis Southwestern Railway's accounts were not all kept on the received basis, and in answer stated that it might develop; he was not prepared to say. The test on the St. Louis Southwestern Railway was made in October, 1908, when transportation conditions were normal. The test on the St.

Louis, Iron Mountain & Southern Railway, from which the State took its figures, was made at a time when transportation conditions were abnormal on account of the congestion of freight that existed in the month of October, 1907, which all of the witnesses who have had experience in handling trains and transporting freights testified would materially affect not only the tonnage of the local and through trains, but the movement of freight in the State. This congestion existed in other States, and would necessarily derange and interfere with the ordinary, normal movement of freights on the lines of all the roads in the territory where it existed. The evidence showed it existed in Chicago, Memphis, St. Louis, and in fact, all over the Southwest. Again, if conditions were normal and the same system of keeping accounts obtained on the two roads, there could still be no comparison between them because the one is a small, compact system operating in a comparatively limited territory, while the other is a large system operating in eight States.

Exhibits 9 and 24, which are omitted from the printed record, but copies of which are filed under the stipulation in the cases, are maps of the Missouri Pacific and St. Louis Southwestern or Cotton Belt systems, and show the extent of the territory in which each line operates. The total mileage of the St. Louis Southwestern railway is 773 miles, of which 452.2 is located in the State of Arkansas, and 259 miles in Missouri (exhibit 10). The total mileage of the St. Louis, Iron Mountain & Southern Railway proper is 2,599.15 miles, of which 1,355.09 is located in the State of Arkansas, and 1,244.06 in Missouri (exhibit 2).

The total mileage of the Missouri-Pacific-Iron Mountain system is 7,000 miles (R. 2076); of the Cotton Belt system, which includes the St. Louis Southwestern Railway, is 1,558 miles; but the lines of that company in Arkansas and Missouri are operated separately from the Texas lines, while the entire Missouri-Pacific system is operated together under one organization (R. 2077).

St. Louis is the chief station and the northern terminus of the St. Louis Southwestern Railway in Missouri. It is 202 miles from St. Louis to the Arkansas State line, and 349 thence to Texarkana in Arkansas, which is the southern terminus of the main line. The road crosses the Mississippi River into Illinois at Thebes, and its line terminates at East St. Louis. There is a short branch to a point on the west bank of the Mississippi River opposite Cairo. These are the principal initial points beyond the limits of the State of Arkansas, and it can readily be seen why the accounts kept by the auditor would correspond very closely with the actual movement of freight, and why any small amount of lapovers would be the same from month to month. There could in the nature of things be but little, if any, perceptible variance in the movement of freight on a line of that character.

The condition of the Chicago, Rock Island & Pacific and the St. Louis & San Francisco Railway systems are more nearly like those on the Missouri-Pacific-Iron Mountain. The former has a mileage of something over 8,000 miles, the latter over 7,000 miles. Like the Missouri-Pa-

cific-Iron Mountain system, they each cover a large extent of territory in different States. Mr. Nay, the comptroller of the Chicago, Rock Island & Pacific, and Mr. Gray, the vice president and general manager of the St. Louis & San Francisco Railway, testified that an effort had been made to keep an account of the tonnage on the system with which they were severally connected in the method followed by the State in these cases, and that they were forced to abandon it because the monthly accounts did not correctly reflect the actual movement of freight during the month. See extracts from their evidence, *supra*, 141, 149. Mr. Nay testified that there was a variance of 10 per cent or more between the accounts and the freight handled. He and Mr. Gray both testified that they had abandoned that method in order to obtain reliable statistics; that the lapovers were so unequal that the statistics so obtained could not be used for purposes of comparison.

EXHIBIT K, PREPARED AND FILED BY THE STATE.

We will now take up exhibit K, which contains the formulas prepared by the State's accountants for making the division between local and through freight trains, and state and interstate freight traffic on the St. Louis, Iron Mountain & Southern Railway. The same method was followed in the St. Louis Southwestern Railway.

We must in the beginning crave the indulgence of the court if we go somewhat into detail in discussing this exhibit. It deals separately with every item of expense connected with the maintenance and operation of the railroad and equipment. The findings and rulings of the court can not be reviewed without discussing many of the details.

MAINTENANCE OF WAY AND STRUCTURES.

This is the first division of expense contained in the exhibit. The exhibit divides the expense between local and through trains on the basis of the total engine and car miles of each class during the month of October. Fifty per cent is added to the engine mileage of local trains on account of additional mileage made by them in station switching, and it is assumed that each engine mile is equivalent to two and one-half car miles. After ascertaining the engine and car mileage of each class of trains and the ratio that each bears to the total, the percentages are used in dividing the expense, with the result that 16.98 per cent is charged to local trains, 83.02 per cent to through trains.

The expense incurred in the maintenance of way and structures is treated as an operating expense, and is carried in that way in the current accounts of the railroads. It is not, as a rule, incurred concurrently with the causes that necessitate it, and does not run evenly from year to year. It involves large expenditures, and for that reason is incurred as the revenues of the company will best enable the expenditures to be made. Unlike all other current repairs this class of expense is provided for by annual appropriations, the amount depending upon the business conditions and outlook at the time the appropriation is made; they are frequently cut down in case the business should fall short of that anticipated at the time the appropriation is made, without regard to the necessity to repair, beyond what may be actually required for safe operation.

If a good year is anticipated, an adequate appropriation in view of the business anticipated will be made. It may amount to several hundred thousand dollars per month. It is incurred for the purpose of conducting the business that is anticipated, consisting of state, interstate and trans-state. It is charged in the current accounts and should, in any division of expense as between the classes of traffic handled, be charged ratably to the several classes in proportion to the revenue realized from them. It is more nearly a revenue account than almost any other carried by the railroads under their system of accounting.

M. L. Byers, who is the Chief Engineer of Maintenance of Way and Structures of the Missouri-Pacific System, a

man of ability and probability as familiar with questions of that sort as any one, testified in substance as follows:

"The method adopted by the State in dividing maintenance of way expenses between local and through trains, and the traffic on those trains could be accurate only by accident; the plan does not take into consideration a number of the factors which affect the cost of operation of those two classes of trains, and it fails to consider that there is at least 75 per cent of the expense that does not vary with the changes in the amount or character of the traffic at all." (R. 1700.)

(The State's witnesses testified that 90 per cent of that expense was not affected by the traffic, but was caused by the elements, and matters of that kind. (C. W. Hillman, R. 1521; R. D. Parker, R. 1162, 1163.)

Mr. Byers further testified:

"Of the remaining 25 per cent, there is a very large proportion that, while it varies more or less with the traffic, yet, those expenses are not necessarily incurred at the time the traffic is handled; it may be incurred a great many years after that—so long after as to apparently destroy the value of the data obtained in the method proposed.

"Steel rail renewal is brought about by the wear and tear of passing trains. That steel stays in the track from five to twenty or thirty years before it is renewed, and the expense incident to the wear and tear in the rail today may not be actually incurred by the railroad company until a great many years afterwards. A division of this expense on a car and engine mile basis does not take into consideration the varying size of the locomotive, the varying amount of the lading of the car. Under this method, by changing the character of the service in one class of trains, the actual expense of that class of tonnage would be increased or decreased. For instance, a heavier locomotive on the through freight service would not change the mileage, yet, it would change the amount of expense for maintenance-of-way. The 25 per cent of expense affected by the traffic

would be influenced by the loading of cars and by the speed of trains. By far the greater proportion of the maintenance-of-way expense is not affected by the traffic and the small proportion that is affected is much of it affected in such a remote way that it would be much more accurate to consider the maintenance-of-way expense in the same way as the general expenses are considered and distributed. The repair of fences, one of the items of this account, bears no relation to the amount of traffic or to the character of the traffic. In certain portions of the maintenance-of-way expenses the weight of the engines has appreciable effect. If one class of service were equipped with heavy engines and the other with light engines, there would be a change in the relative expense brought about by the two classes of service. The general practice of railroads is to use their lighter engines in local service and the heavier in through service.

"The wear and tear produced in the items of maintenance-of-way that is brought about by the traffic is a matter of gross traffic or of the total weight on the rails rather than the amount of freight which happens to be in the car. The formula does not establish any relation between the amount of weight and the amount of revenue tonnage. It is not fair to divide the expenses of a train, either local or through, between the two classes of freight carried on it—state and interstate—on the basis of the number of tons carried on the train without discriminating as between the tonnage of the lighter loaded and the more heavily loaded cars.

"The proportion of maintenance expense not due to traffic varies with the conditions; it might be as high as 90 per cent, and is at least 75 per cent. The character of the maintenance expense is similar to that of general expense, and whatever method is proper and fair for the division of general expenses would also be fair and proper for the maintenance-of-way." (The State's witnesses placed it at 10 per cent. R. 1700-1703.)

That is the testimony of a civil engineer of recognized ability and large experience.

Mr. Carl Gray testified:

"Fifty per cent added to local engine mileage for station switching is not enough to compensate for the extra maintenance occasioned by switching. A proper allowance can not be determined. The car mile is so variable a quantity as to be of no service in any comparison or division. It makes no distinction between classes of loading, between weights or between the difference in tare to load. It assumes that the cost is equally proportioned for a car handled five miles or 500 miles." (R. 1897, 1898.)

The accountants, in referring to this proposition, cite contracts between railroad companies. Mr. Gray and some other witnesses were examined in regard to that. They testified that was a matter of convention. Sometimes the train miles were used and sometimes the car miles. There was no universal rule; it was always a matter of arrangement between the two companies interested.

Mr. Ward:

"No operating man could determine with accuracy whether 50 per cent added to local engine mileage for station switching is correct or not. Switching by local trains varies very much from day to day, in fact, with every trip."

(That is a fact developed from the testimony of the State's witnesses in a striking manner.)

"A local train as a part of a day's work, may be engaged almost exclusively in peddling out less than carload freight; on the other hand, it may have very little of that to do and may be engaged in doing the local switching, or it may be engaged in it in varying quantity.

"The assumption that 'each engine mile is equivalent to two and one-half car miles,' is one that has no proper basis in fact. The effect of a locomotive on the track is very much more than two and one-half times the effect of a

car. The effect can not be measured by the number of wheels. The blows which the roadbed receives from the improper balancing of the reciprocating parts of a locomotive might run 2, 3 or even 500 per cent as great as those of a car or train of cars. A strip of track has been known to have been enormously injured by a trip over it of one engine. A piece of soft track might be damaged to thousands of dollars by one trip of an engine, while that same engine could run over the same piece of track on a dry day and cause very little damage so that two and one-half times is entirely insufficient. (R. 1857.)

"Neither the ton mile or the car mile will afford a proper division of maintenance-of-way expenses; a large part of the expense is not caused by train or car movement."

Mr. Johnson:

"The basis adopted by the State in dividing maintenance-of-way and structures between local and through trains does not bring about any closer relation to the expense of those two classes of trains than any other arbitrary method would. The larger the proportion of expense that is not attributable to the movement of traffic, the less accurate would be the car mile or train mile because neither the train or car mile would have any effect on that class of expense. It goes on regardless of the volume of business." (R. 1986.)

Counsel say the car mile is the proper basis because it represents the use. If the Court please, keeping up the track is a matter that preparation is made for in advance, in anticipation of business that is to come, and with reference to the volume of the business that is to be conducted over it and the resultant earnings therefrom. The damage that causes the mischief to which the money expended is to be applied, does not occur concurrently with the period in which it is applied. It may be expended for renewing tracks that have been there for a great many years, as explained by Mr.

Byers. It is intimately connected with the revenue of the company, more closely than with the operation and use. You can not connect it with the operation because a large part of it is not brought about by that, but is the result of natural causes. You can connect it closely with the revenue, and that is done constantly in the manner in which it is treated in the ordinary administrative processes of the company. They make a monthly appropriation of \$100,000, say, or \$500,000, for the fiscal year for the maintenance-and repair of way and structures. If they think the business is going to be good, if they anticipate a large business and a corresponding revenue, they make a larger appropriation than if good business is not anticipated. If their expectations are not realized, then they will cut it down and not use the full appropriation. That shows how intimately it is connected with the revenue and with the volume of business. It is not a question of the use, because much the greater part of it is caused by conditions independent of use, and it is very intimately connected with revenue in the ways pointed out by the witnesses.

Speaking on this subject in the Oklahoma case the Circuit Court of Appeals for the Eighth Circuit said this:

"But there was a large percentage of the cost of doing all the business of each of the companies in Oklahoma, like the cost of the maintenance of way and structures, which was incurred for the common benefit of its interstate business and its intrastate business, and there is no method of dividing these items of common cost between these classes of business which is sure to be mathematically accurate. Many methods have been and still are suggested. The question was: Which was the most equitable, the most likely

to produce a fair and just division? And upon this subject there was much testimony of many witnesses, whose long experience in the practical operation of railroads, exceptional opportunities for extensive observation, and peculiar knowledge qualified them to form and express opinions. The Circuit Court examined all this evidence, considered the arguments of counsel, and adopted the revenue basis, and assigned these items of common cost to the classes of business in proportion to the gross earnings of these respective classes. * * * There is no basis of division that is free from objection and criticism. But the decisive preponderance of the evidence is that the revenue basis is the most likely to be just and fair. Much that has been said concerning the use of this basis for the apportionment of the value of the property is applicable to its employment for the division of items of common cost. No reasons for the use of either of the other bases that seem to us so cogent and persuasive as those given by Judge Hook, at pages 498, 499, of 177 Fed., for his adoption of the revenue basis have been called to our attention or occur to us. The use of that basis is sustained by many decisions, and it can not be held to be erroneous or mistaken."

Love v. A., T. & S. F. Ry. Co., 185 Fed. 330.

This is perhaps the largest separate item of train expense, amounting to \$553,375.11 for the six months' period. The court below found that the overwhelming weight of testimony showed that but a small part of the expenditures was caused by the operation of trains, and that the attempt to apportion it on the ton, car or train mileage basis would be an injustice to the railroads; that the straight revenue basis would produce more accurate results and divided it on that basis. (Opinion 76.)

Part of this expense is in connection with repairs and maintenance of stations and other buildings used for the handling of freight, and the testimony of the State's ac-

countants shows that there were 2,224,437 ton miles of trans-state freight on local trains in the month of October, 1907, or about 23 per cent of the total interstate ton miles. This class of traffic makes little or no use of such buildings, nor will it cause any of the station switching, for which the State has allowed 50 per cent to the car mileage of local trains. And when it is remembered that after the cost of the local train is ascertained, that cost is divided between state and interstate traffic in proportion to the ton miles of each class of traffic on those trains, it will be readily seen that the trans-state and long haul interstate freight is charged with a full *pro rata* share of all of the expense assigned to the train, and the expense of intrastate freight reduced to that extent although no part of such expense was properly chargeable to the trans-state freight.

MAINTENANCE OF EQUIPMENT.

(a) **Locomotives.**

The expense under this head was divided between yard, local and through road locomotives on the basis of the locomotive mileage of each class within the month. 50 per cent is added to the mileage made by the yard locomotives to provide for extra maintenance due to yard service; 50 per cent to the mileage of road locomotives in local service to provide for extra switching mileage, 50 per cent to the switching mileage of the local train engines, thus ascertained, to provide for extra maintenance due the switching service (making 75 per cent added to the local engine mileage.)

On this basis the mileage of the locomotives engaged in the three classes of service, respectively, was ascertained and the ratio that each bore to the total mileage was used in apportioning the total expense. The amount charged to each class was as follows:

Yard locomotives	\$69,135.80 = 37.64%
Local locomotives	43,733.35 = 23.81%
Through locomotives	70,807.25 = 38.55%

The expense of maintenance of yard locomotives is again divided between local and through train service on the basis of the number of cars of each class of service handled by yard engines during the month, viz.: Local service \$13,453.83; through service \$55,681.97.

This method of division was approved and followed by the court. (Opinion 77, 108.)

Referring to the arbitrary allowances in favor of locomotives engaged in yard and local service, Mr. Gray testified:

"There is nothing in my experience which justifies either of those assumptions. They are entirely arbitrary. They may be fair; they may be too large. One objection to it is the fact that the word 'mileage,' to begin with, is an assumption, and 50 per cent added to an assumption does not strengthen it." (R. 1899.)

Mr. Ward testified:

"This is another assumption. I do not know where they found the basis for adding 50 per cent; that may be too much or too little. The mileage of yard locomotives is not kept accurately. It is the custom of most roads to credit yard locomotives with mileage, but, as a matter of fact, the

basis of hours worked would be more accurate. It is customary to assume that the yard engine makes six miles an hour, but those mileage figures, when applied to yard locomotives are estimates only, and are made only for the purpose of comparison, to determine the comparative cost of maintenance, and to ascertain whether the engine is performing service enough to justify 'shopping.' They should not be used, in my opinion, in connection with the determination of anything so important as the rates which should be charged for carrying freight." (R. 1858.)

In the first place, to provide for possible extra switching mileage, they add 50 per cent, and then they add another 50 per cent for possible maintenance. He says:

"In my opinion, it is no more feasible to separate the cost of handling local and through business than for a general storekeeper to determine the cost of selling one article as compared to another. Those are assumptions for which I can find in my experience, no basis in fact. I could not determine accurately whether those things are right or whether they are not, and I do not believe any accountant can do so." (R. 1858.)

We will take up the apportionment made by the court of the expense of maintenance of yard locomotives when we come to discuss "Yard and Terminal" expense under the heading of "Transportation," as a similar question is involved in both charges.

(b) Freight Cars.

The total amount of expense involved in this item is \$477,895.64. The method of division is described in the exhibit as follows:

"In dividing this expense between local and through service, we have taken into consideration the element of repairs due to the stopping and starting of trains at way

stations, and the repairs due to extra terminal handling of cars in local service. Mr. Wellington, in his work on railroad location, says starting and stopping at way stations is the cause of approximately $21\frac{1}{2}$ per cent of the repair expense to freight cars, and that the terminal handling is the cause of practically 13.5 per cent of the repair expenses. Taking these elements into consideration, the maintenance expense may be divided as follows:

Stopping and starting ..	21.5%	\$102,747.56
Terminal handling	13.5%	64,515.91
		<hr/>
Other expenses	65. %	310,632.17
		<hr/>
Total.....		\$477,895.64

Having separated this expense between the three elements "Stopping and Starting," "Terminal Handling," and "Other Expenses," the State next divided each class between through and local trains on the following basis:

"Assuming that each local train makes a stop, say each five miles, and each through train a stop, say each 20 miles, the local service should be charged with four times as much as the through service, in proportion to car mileage, for the expense due to *stopping and starting*. Assuming also that each car in local service receives two terminal handlings (including handling at local stations), to each terminal handling of a car in the through service, the local service should be charged with two times as much as the through service, in proportion to car mileage, for the expenses due to *terminal handling*.

"The balance of the expenses of freight car maintenance (*other expenses*) is divided between local and through service in proportion to the number of car miles made in each class of service."

The court approved and adopted the general scheme of division between "Stopping and Starting," "Terminal Handling" and "Other Expense."

There is a sharp conflict in the evidence as to the proportion of expense of maintenance properly chargeable to "Stopping and Starting," and "Terminal Handling." The witnesses on the part of the plaintiff were Mr. Ward, Mr. Gray and Mr. Rosing, who is the mechanical engineer of the Missouri-Pacific System, at the head of the mechanical work and shops of that system, and a man of very broad experience in that department. He deals intimately day by day with these problems. He, and the other witnesses named, testified that Mr. Wellington's formulas, which were prepared in 1877, had become antiquated on account of the great changes in machinery and mechanical devices used in coupling cars, and in the construction of cars and engines. He introduced a formula prepared by himself, in which he charged 32 per cent of repair expense to "Stopping and Starting," and 23 per cent to "Terminal Handling," which he testified was based upon his judgment from investigation and experience in supervising work of that character for a number of years. His testimony on this point is voluminous, but we will not discuss it, as the court found that 25 per cent was a proper charge for stopping and starting, and 13.5 per cent for terminal handling, practically adopting the table prepared by Mr. Wellington. The testimony was conflicting, and we concede that the finding of the court is binding at this hearing. (Opinion 77.)

- The testimony of Mr. Rosing will be found at pp. 1727, and 1730-1732. Mr. Ward, at p. 1860, and Mr. Gray at p. 1900.

In dividing the expense of "Stopping and Starting," and "Other Train Expenses" (not including "Terminal Handling"), the court followed exhibit K, and used the same percentages, dividing these expenses on the car mileage basis.

It divided the expense of terminal handling between trans-state, interstate and intrastate freight on the basis of the ton mileage for the month of October, 1907.

A clear statement of the court's findings is contained in the following extract from the opinion:

"In making the calculations on these items the accountants for the State assume that while the local trains stop every five miles each through train stops every 20 miles, and therefore that the local service should be charged with four times as much as the through service in proportion to the car mileage for expenses due to stopping and starting; they also assume that each car in local service receives two terminal handlings to one terminal handling of a car in through service, and for that reason the local service should be charged with two times as much as through service in proportion to car mileage for expenses due to terminal handling. The court finds from the evidence that while local trains stop every five miles, the through trains stop only every 35 miles, and for that reason the local trains are chargeable with seven times as much for that item as the through trains. In charging the through trains with one terminal handling in the State, they include the trans-state freight, and charge that with one terminal handling. As the trans-state business of the roads constitutes a very large percentage of the business, over 51 per cent of the entire freight business in the State of Arkansas for the Iron Mountain and nearly 65 per cent of the Southwestern business, it is a matter of considerable importance to determine what should be properly charged to this item. The trans-state business, which merely passes through this State, both of the terminals, that of the starting and destination, being in other states, it will be seen that there should

be a difference in the charge of terminal expense in this State.

"A great deal of evidence has been introduced on the part of the State to show when through trains carrying this trans-state freight come into division yards, they are broken up and handled in the same manner as the interstate business, and for this reason it is very earnestly argued that it should be charged with one terminal. On the other hand, the evidence leaves no doubt in the mind of the court that while there are some yard expenses connected with the trans-state business, it is entirely free from the great expense caused by terminal handlings. It is true the handling of these trans-state cars at terminal points differs very materially from the 'crossing of a bridge,' a figure of speech indulged in by one of the witnesses for complainants, still, the evidence leaves no doubt in the mind of the court that the work connected with the trans-state cars is not of that nature, which should properly be called and charged as a terminal handling at any other place except that of starting and destination. The switching necessary for delivering and receiving the cars is saved. It is true there is considerable switching at every division point, but, as established by the evidence, in making up a through freight train, the trans-state cars are placed in such position in each train that all cars intended for a certain territory or for a certain branch road that they can be moved at one time and placed in a solid mass on the track from which they are to be finally moved. Besides, it is admitted that local freight originating at and destined for a point not a terminal, but which must pass an intermediate terminal yard, receives at such yards the same service as trans-state cars do. As the trans-state business is much heavier than either the interstate or local, the number of cars in these trains merely passing through the terminals is naturally larger. From the exhibits filed by Mr. Moore, who was night yardmaster at the Little Rock terminal in 1907, the trans-state freight in these trains would average from 60 per cent to 70 per cent; the cars would be moved in one body to tracks on which they were to be transported further; interstate business intended for that point would have to be taken to the different commercial tracks, and from there hauled to the industries to which they were consigned; they are handled by carrying

them in small lots of from one to three cars; they would be carried in some instances a distance of several miles, and after having been emptied, they would have to be sent for and switched back to the freight yards of the company. If intended for other points in the State, they would be handled like trans-state cars, being switched over to the track on which the trains for these localities would be made up. The same expense would be incurred and the same injury to the cars caused in receiving and handling as local freight passing through these terminals. Mr. Moore filed with his testimony (exhibit 53), what is called a 'consist' of the through freight trains handled during the month of October, 1907, which shows the movement of the cars after they reached the Little Rock division yards. He takes for illustration, the movement of one train and thus explains it in his own language:

"It is shown by this consist that the cars destined to Texas are in the train beginning from the caboose, including 42 cars destined to Texas, and ahead of that are the cars for the Valley Division and Little Rock proper, and local south on short points beyond Little Rock. The first car mentioned in the consist at the top is the car next to the caboose at the rear of the train. The last car on the list is the car which is next to the engine. Those 42 cars destined to Texas would remain on the train on which they were received, and the 16 cars (there were 58 cars in the train), would be taken off the head of the train and put on such tracks as are designated for that purpose. The 42 cars would remain on the track on which they were received, and there would be added to that train more tonnage and forwarded from the track on which we received it; they would not be switched; they would be sent out on the day they came in."

"This consist shows that a very large percentage of the cars on all through freight trains and trans-state were moved as testified by Mr. Moore. Mr. Cannon, who, in 1907, was Superintendent of the Arkansas Division of the Iron Mountain, testified to the same facts, and also that at the Hoxie Division yards, the percentage of through freight is still greater and subject to less switching than at Little Rock. On the other hand a former yardman of the Iron Mountain testified that as a rule the number of cars intended

for trans-state transportation constituted a small percentage and are handled almost as much as those intended for local transportation.

"All agree that the injury to freight cars incident to delivering and hauling them back to the yards is not incurred for the trans-state cars. When cars are received from other lines for trans-state transportation, there are no terminal expenses except the yard charges, and that is so well known that all of the witnesses who testified on that subject, those for the railroads as well as those for the State, agree that when the transportation is over three or more lines, in the division of earnings, extra allowances are made to the terminal roads, receiving as well as delivering, while a smaller proportion is paid to intermediate carriers for the reason that there are no terminal expenses. Mr. Lincoln, one of the witnesses introduced by the State, who has had a great deal of experience as a railroad man, and although at present not connected with any railroad, occupies the position of manager of the St. Louis Freight Bureau, which necessarily requires that he keep himself fully informed in all matters of this nature, agreed with the witnesses of complainants on that subject that there should be no expenses charged in Arkansas for the terminal service of trans-state business.

"Mr. Parker, a witness introduced by the State, who is an expert engineer for the Texas State Railroad Commission, also testified that while trans-state business would have the same expense as interstate attached to it in the yard service, there is none at the terminals.

"But there are some items of the interstate business which are only charged with one terminal, which, in the opinion of the court, should be charged with two. The evidence shows that all the cotton handled in the State is credited to interstate earnings. While 30 per cent of that is transported uncompressed and therefore has only one terminal handling in the State, the other 70 per cent has two terminal handlings in this State. The evidence shows that cotton is brought to the concentrating points either on local trains or on what is called 'pick-up' trains, trains which during the cotton seasons are used exclusively for picking

up the cars loaded with cotton along the line, and before it is transported out of the State it is compressed. These cars are taken to the compress, there unloaded, the empty cars hauled to the yards, and after the cotton is compressed, empty cars are carried to the compress for reloading. That part of the interstate traffic has two terminal handlings as much as the local business, except that it is carried in train loads to the compress instead of being hauled in small lots, but that is fully made up by the additional expense caused by first delivering the cotton to the compress and then delivering the empty cars for the purpose of transporting it out of the State after having been compressed. The evidence shows that cotton constitutes about 7 per cent of the interstate business, or about 2.5 per cent of the interstate and intrastate business of the Iron Mountain. It is, therefore, proper that of the 34 per cent of the interstate business, 2.5 per cent should be charged with two terminal handlings instead of one, for this cotton.

"Another item of interstate traffic which receives, to a great extent, two terminal handlings in the State, is lumber and forest products. The evidence shows that a material part of forest materials, especially staves and headings, are brought in the rough to the mills and then, after having been finished as manufactured material, are reshipped on the interstate rate for the entire haul and the earnings credited to interstate traffic. Many of the larger mills have short roads which carry the rough material to the mills; these are called 'tap lines.' Allowances made to them for these hauls will be considered by the court and included in determining the difference in rates between interstate and intrastate business and for that reason need not be considered in determining this item.

"A small proportion of the grain brought in from other states is also handled twice. From all the evidence the conclusion reached by the court is that 2 per cent of the interstate business should be charged for the transportation of lumber and grain with two terminal handlings in the State.

"Another item of interstate business which should be charged with two terminals is the Memphis and Fort Smith freight for the State of Arkansas. As has been stated here-

inbefore, all of the Memphis business for points in Arkansas and most of the Fort Smith business destined to points in this State, is treated as interstate business, but the entire expense thereof charged to this State. It is hard to determine from the evidence how much this business amounts to, but a liberal estimate will make it 2 per cent, and this should also be charged with two terminals.

"This item of terminal expense should therefore be divided upon the following basis:

Trans-state receiving no terminal handling.....	51.16%
Interstate receiving one terminal handling.....	34.19%
Interstate receiving two terminal handlings.....	6.50%
Intrastate receiving two terminal handlings.....	8.15%
	<hr/> 100.00%"

(Opinion, pp. 78-85.)

See table containing the division made by the court at pages 108-110 of the opinion.

And the evidence of B. W. Moore, R. 1773; John Cannon, R. 1796, 1801, 1802; H. V. Brown, R. 1804, 1805; J. C. Lincoln, R. 965, 991.

Appellants assign as error that the court erred, (1) in estimating that the through trains stopped every 35 miles, as against five miles to local trains; (2) in not charging trans-state and interstate traffic with the cost of stopping and starting freight cars, and (3), in making different allowances for interstate and intrastate traffic, when the evidence shows that this is an element of expense from the physical starting and stopping of freight cars unconnected with the class of traffic carried on said cars. (Assignment, 35.)

Counsel wholly misconceive the action of the court.

(1) It did not divide the expense of stopping and starting on the basis that through trains stop every 35 miles against five miles to local trains. Counsel were evidently misled by a statement at page 78 of the opinion, that the court finds that fact from the evidence. This statement was based on the testimony of conductors and brakemen introduced by appellees, and an exhibit filed by appellants as to the number of stops made by through trains. That and other testimony showed that the through trains only stopped for water and passing trains, making about three regular stops between divisional points, which would average a stop every 35 miles, while the local trains stop at every station, the average distance of the stations apart being five miles. For instance, A. Paulette, a witness for appellees, testified that a local train running from Argenta to Russellville would make 23 regular stops, a through train would make three stops for water; this without meeting other trains. Each class of trains would have to stop occasionally at sidings to allow other trains to pass. (R. 2212.) That the through train between Russellville and Van Buren made five regular stops, viz.: Mulberry, Coal Hill or Denning (depending upon which line the train follows), Clarksville, Hartman, and Mill Creek. (R. 2207.) The local trains make 30 regular stops, each of them stopping occasionally for passing trains. (R. 2210.) But it is unnecessary to go into the evidence on this point, as the court will see by a comparison of the division of expense

caused by stopping and starting trains, found in exhibit K, with that made by the court. In exhibit K, 41.81 per cent is charged to local and 58.19 per cent to through trains, and in the appendix (p. 108, of the court's opinion), the same percentages are used in dividing that class of expense. The difference in amount charged to local and through trains respectively, is as follows:

The court's figures increased the expense of the local trains \$6,993.29, and of the through trains \$9,733.06. This increase is accounted for by the action of the court in attributing 25 per cent of the expense of freight car maintenance to stopping and starting instead of 21.5 per cent, the percentage used in exhibit K. This was an increase of 4.5 per cent above the amount charged to that item in exhibit K, and makes a difference in the total expense resulting from stopping and starting of \$16,726.35, which corresponds exactly with the sum of the differences charged by the court to through and local trains, respectively, thus demonstrating that the only change made by the court grows out of the per cent of increase of the expense of stopping and starting from 21.5 per cent to 25 per cent.

What we have just said is also true of the item designated as "Other Expenses." This is by far the largest item embraced in this class of expense, being \$310,632.17. It will be seen by comparing the table at the bottom of page 109 of the court's opinion with the division as shown on exhibit K, that the same per cents are used, viz.: Local trains,

15.22, through trains 84.78; that the relations are the same in all respects, the only difference being in the total amount of the item which in exhibit K, is \$310,632.17, and under the court's method of separating the elements of expense of freight car maintenance is \$293,905.82, being, as in the case of "Stopping and Starting," the exact difference brought about by changing the per cent of this class of expense attributable to the stopping and starting from 21.5 per cent to 25 per cent, which amounted to the sum mentioned, \$16,726.35, adding that amount to the expense of "Stopping and Starting," and deducting it from "Other Expenses."

(2) The expense of stopping and starting freight cars is included in and divided between local and through trains in the division of this item of "Starting and Stopping," in which we have shown that the court followed exhibit K. It assuredly does not lie in the mouths of appellants to object to the action of the court in following their own method of division, and yet, that is what they complain of.

(3) The different allowances for interstate and intra-state traffic referred to in the assignment of error, we take it, relate to the method of dividing the expense of "Terminal Handling," adopted by the court. This item amounts to \$64,515.91. The court apportioned it, as we have seen, between the classes of freight and not on the basis of the car miles. The ground upon which it acted is explained in the extract from the opinion, and is supported by the evidence cited in the opinion and by us.

BEFORE LEAVING THIS BRANCH OF THE SUBJECT, WE WILL CALL THE ATTENTION OF THE COURT TO A VERY IMPORTANT ELEMENT OF EXPENSE CHARGEABLE TO THE LOCAL TRAIN SERVICE FOR WHICH NO ALLOWANCE WAS MADE BY THE STATE OR BY THE COURT. WE REFER TO THE EXPENSE OF REPAIRS TO FREIGHT CARS CAUSED BY WAY STATION SWITCHING.

The allowance of four to one, made in exhibit K, on the ground that local trains are chargeable with four times as much as through trains on account of more frequent stops and starts, does not cover it because it does not embrace the switching done by the local trains at way stations, which is a far more important element of expense than stopping and starting. Mr. Ward testified:

"I assume that these average distances (stops) as stated, are approximately correct. But that does not constitute a proper measure of the expense of handling local as against through service, because the through train in starting and stopping simply takes the siding, and after it has met the train, which has the right of the road, it then proceeds; or, in many cases its stop is only for the purpose of taking coal and water and it does not have to stop even while the man turns the switch. On the other hand the local train goes into the siding and after it is there it has its work to do by taking out the cars or placing in cars at various industries or on the house track at that station, and it must pick up other cars and place them in the train, to an extent that constitutes, for all practical purposes, a terminal handling for all of the cars in that train at practically every station along the line of its run. So the multiple of four to one for the through service, on account of the assumed difference of five miles and twenty miles would

not be correct. It would be more nearly eight times, although I don't know that eight is accurate. However, it is more nearly eight than it is four.

"For that reason the local, in my opinion, under this theory is not charged with nearly as large a proportion of the car repair expenses as it should be.

"Apparently the accountants who worked this plan up counted this handling at local stations as a service of the same character as the terminal handling, and this multiple of the two times for one is wrong. I think I covered that in a general way in my statement in regard to the stopping and starting each five miles instead of each twenty miles. They all come under the same class. The whole method, it seems to me, fails to take into account that feature that the handling of the cars in the local service is very much greater than in the through trains." (R. 1861, 1862.)

Speaking of terminal handling, Mr. Ward testified that there is a very great difference in handling and in the destructive effect on cars in through service from the local service, "a car in through service simply being put from one train into another, or having its engine and caboose changed, as comparatively little is done to it and in many cases nothing whatever.

"But a car switched in industrial switching has to be handled a number of times, depending upon the conditions. It has to be taken from one train and put on another track and sometimes there are a group of cars going into the same track or territory, and, depending upon conditions, they are perhaps rehandled again, to be placed at the proper end of the switch tracks. These run in all directions, and the cars have to be dropped from the head of the train to the rear of it; and there are many movements which go to increase the risk of injury and the cost of maintaining those cars, which do not apply to the cars passing through terminals in through service." (R. 1890, 1891.)

Mr. Ludlam criticized this testimony by saying that the extra work done by local trains is taken care of by the allowance of two to one for "terminal handling." He is mistaken. "Terminal handling" only includes such work as is done in making up trains at terminal stations.

Let us turn to Mr. Wellington's formula. His distribution between these items is "stopping and starting," "terminal; make up of trains." Learned counsel in the court below assumed that the terminal make up of trains was intended by Mr. Wellington to include way switching. His view was based on the punctuation, the presence of a semicolon after the word "terminal." We do not regard that as very material, because an examination of Mr. Wellington's formula makes it manifest that it was included in one or the other of these items. His total distribution, excluding the foregoing items, consists of "Effect of Time and Age," "Curves and Grades," and "Distance and Straight Track." Inasmuch as switching at way stations could not be included in any of these items, it was of necessity included in the other two, unless Mr. Wellington committed the oversight of omitting it altogether. Mr. Ward, Mr. Gray and Mr. Nay included it in "stopping and starting," and we believe we are justified in assuming that the interpretation of these operating men is of greater weight than that of Mr. Ludlam, an accountant. At any rate all of the operating men testified that an additional charge of 8 to 1 should be made against the local train service on account of way switching. It is immaterial whether it is placed in the "terminal handling" or "stopping and starting;" it was not

allowed for by the court. At the time Mr. Wellington's book was written (1877) the method of operation was very different from what it is at present. Through train service was on a different basis. Railroads had not been organized into large systems providing continuous lines of interstate transportation, but interstate shipments were cut up into short hauls on separate and disconnected lines. The separation of the functions of the different classes of trains out of which the through and local train service as it now exists has grown, had not then been made, nor large terminal divisions and stations established, and under the conditions that prevailed at the time he wrote, Mr. Wellington was justified in making a smaller allowance for stopping and starting and terminal make-up of trains in his distribution of expense than would be required at this time.

Mr. Gray testified: "That the stopping of a through train is most frequently, for transportation or operating reasons, done to take a siding to meet a passenger train, and is not accompanied by any more work than the taking of a side track or the holding of the main line. The local train performs the greatest amount of its work in connection with the stops. The allowance should be several times four." (R. 1902.)

Supervision and General—Was apportioned by the State in exhibit K, between local and through service, on the basis of direct charges for maintenance and equipment as ascertained under the assumptions made by the State's accountants.

Traffic Expense—Was apportioned on a straight revenue basis. The court followed the State's basis of apportionment in both of these items.

(4) TRANSPORTATION EXPENSES.

(a) Station Expenses.

This class of expense is divided in exhibit K between intrastate and interstate business in proportion to the volume of traffic of each class handled in the State; that is to say, on the basis of the number of tons of each class of traffic, estimating that each intrastate ton was handled twice and each interstate ton once. The State later filed exhibit Y, in which they excluded the trans-state tons.

This division disregarded some most important elements of difference in the expense of handling state and interstate freight at stations. Mr. Gray on this subject testified:

"It assumes that the cost of handling forwarded business per ton is the same as the cost of handling received business per ton, while practically there is a great difference; a forwarded ton is billed by the agent; he is not responsible for the correctness of the bill or the rate used. Upon business received he is responsible for the correctness of the bill or the rate used. Upon business received he is responsible for the application of the correct rate and correct accounting.

"It assumes there is no difference in the expense of handling a ton of brick or coal, car loads, as contrasted with a ton of classified merchandise, the one involving a very minor amount of work, the other involving a very intricate knowledge of rates, accounting and handling." (R. 1903.)

Mr. McPherson, in speaking of terminal or station expense, testified that the terminal expense, referring to station expense, attaching to any shipment, either carload or less than carload, is as great for five miles as it is for five hundred miles, and the multiple between will show the increasing expense that attaches to short hauls.

He said:

"The terminal expense incident to shipping a ton of merchandise from Little Rock to Jacksonville, thirteen miles, is as great as shipping a ton of merchandise from Little Rock to Van Buren, 153 miles, and, as the terminal expense forms 18 per cent of the total operating cost, the ton mile basis of division of expense would eliminate just that percentage of the cost from consideration." (R. 315.)

When you come to consider the long and the short haul, is where that becomes important and material.

Mr. Ward testified that the terminal handling of short haul intrastate freight is much more expensive per ton mile than long haul interstate freight. Many more car miles are required to handle a given number of short haul intrastate ton miles than the same number of interstate long haul ton miles.

And yet it is divided according to the tonnage in these apportionments made by the State.

He said:

"A larger amount of property and facilities is required to handle a given number of short haul ton miles than of long haul ton miles. A ton of freight of a given kind, received at a given station, will not cost any more to unload from a car and deliver to a consignee if it had originated in

the State than if it had originated in another state, but when the cost of handling is divided by the ton mile applicable to it, it makes a much heavier charge to the short haul intra-state ton than to the long haul interstate ton.

"I might illustrate by comparing two shipments of the same class of merchandise, the one from Chicago to Benton, Ark., the other from Little Rock to the same destination. The station expense at Benton in each case is exactly the same; each operation is precisely the same as the other, but when you measure the expense by ton miles you have twenty-five miles to apply to that ton that comes from Little Rock and approximately 600 miles on the ton that came from Chicago, so that there is perhaps 24 times more chargeable to the state than to the interstate, of that station expense." (R. 1864.)

If the Court please, this statement by Mr. Ward shows how unreliable either one of the bases adopted by the State for dividing that class of expense is, either tons or ton miles. You can not divide it so as to apportion the relative expense by either method without disregarding the effect of the long and short haul. There is the advantage of dividing it on the revenue basis. The revenue represents every element that enters into and forms a part of the expense that is embraced in "station service."

The court below, recognizing the importance of the long and short haul in the division of that class of expense, apportioned it on the basis of the ton mileage of each class of traffic, charging each intrastate ton with six handlings, the interstate with one handling, and the trans-state with one-half handling, upon the view that the intrastate is chargeable with six station expenses to equalize the difference in the length of the haul, taking into consideration only the difference in this State, which on the Iron Mountain is three

times as long for interstate as for local. (Opinion p. 85.) The effect of the difference in length of haul on station as well as many other elements of expense is illustrated in the testimony of Mr. McPherson and Mr. Ward, infra 214 and 221, 224.

(b) Yard and Terminal Expense.

There are on the main line of the St. Louis, Iron Mountain and Southern Railway in Arkansas running north and south, three terminal stations at the end of operating divisions, viz., Hoxie, Argenta (Little Rock) and Texarkana. On its main line running east and west are Van Buren, Little Rock and McGehee, and Wynne on the Bald Knob branch between the cities of Little Rock and Memphis. (The yards at Little Rock are situated on the north bank of the Arkansas River, partly in Baring Cross and partly in Argenta, and are referred to in the testimony under those various names.) On the St. Louis Southwestern Railway Company's main line are Paragould, Pine Bluff and Texarkana. Cars are distributed and trains made up at these terminals.

Two classes of yard and terminal expense are provided for in exhibit K. One class consists of the expense of repairs to yard locomotives and freight cars in terminal service, and is provided for under the head of "maintenance of equipment;" the other under the head of "transportation expense."

This expense is "divided between local and through business on the basis of the number of cars handled at ter-

minals, as explained under the charge of maintenance of yard locomotives (2-a)," in exhibit K, and charged to local and through trains in the same proportions.

Exhibit I shows that 165,714 cars were handled in and out of terminals on the St. Louis, Iron Mountain & Southern railway in the month of October, 1907, of which 32,232, or 19.46 per cent of the total, were in local service and 133,482, or 80.54 per cent, were in through service. These percentages are used by the State in dividing the expense of maintenance of yard locomotives and yard and terminal handling. The court followed the method used in the exhibit. (See tables at the end of opinion, pages 108-111.)

The two items were properly treated alike, but the division on the basis of cars in and out of the terminal stations was erroneous.

We will cite the material evidence for the purpose of showing that the court manifestly erred in favor of the appellant.

The manner of handling and distributing cars at terminal stations is described in the extracts from the opinion copied at page 175 of this brief, which shows that there is very great inequality in the amount of the service rendered as between local and through business. On this subject Mr. Ward testified:

"If I understand this correctly, it means that the expense of maintaining yard locomotives is divided on the basis of an account of all cars passing through the yards where yard engines are employed.

"It is customarily the case, in counting cars handled through yards, that they are counted coming in and going out, that is, two counts for each car. If they counted each car passing through a yard twice, they give the local cars no more credit for the services of the yard engine than they do a car passing right through the yard on the through trains. Therefore, the proportion chargeable under this method to the through service would be very much greater than is actually the case.

"The opinion of myself, or any other operating official, as to the excess cost of handling state over interstate business is *on the basis of actual freight and not on the basis of the number of cars passing through the yards*. I might illustrate that position of mine by pointing to the fact that in practically—in fact, I might say in all railroad terminal yards, a very large percentage of the cars on through trains pass through without any handling. The trains run in on to a yard track, and if there is a change in the tonnage by reason of a difference in grade or a difference in motive power on the next division, a few cars will be taken off or a few cars put on that train. Or, there may be a few cars taken off that train, which are destined to that particular station, or to stations on the next local run. But the great majority of cars are not handled in those terminal yards.

"On the other hand, cars that run in local trains are all handled; they all have to be placed in their trains by the yard engine; and after they reach their destination or the distant terminal they are again handled and placed at industries, or on a house track, or in train yards, to go out on through trains going beyond. So that a method which would count the cars handled in local trains and in through trains on the same basis would be very inaccurate in determining the proper proportion of cost of maintaining yard locomotives to apply to one service as against the other." (R. 1859, 1860.)

Mr. Gray testified:

"It assumes to divide the expense of yard locomotives between local and through on the basis of the number of cars of each class. It is to be assumed that customary practices were followed in arriving at the cars handled at terminals, that is, a car in and out counts twice.

"The assumption that a car in local service requires no more switching than a car in through service, is not sound. It is a very frequent thing in practice for the through train to require one switch. That is, the caboose is taken off and a caboose put on the train. One cut is made to reduce, or one switch is made to add tonnage, where a reduction or increase in the train load is caused by physical conditions; while, on the contrary, a local train is the one which requires the most switching, and particularly in proportion to the haul. The local train will in ordinary practice be composed of cars that have been picked up at the local stations, which, when it reaches a terminal, will go in all the different directions; or at that point are switched together for the through trains.

"Another factor which this does not take into account is the fact that the car which passes through that yard, and is never touched individually by an engine, counts just the same in expense as a car which is switched to an industry, where it occasions a switch in some instances even of several miles; it may be handled by itself or handled in conjunction with several others, but it carries in proportion a great many times the expense of a car that would pass through that terminal in a through train. The difficulty about it is that it assumes that the cost of switching one car is the same as switching another car. It may be a good theory, but my experience does not justify me in the conclusion that it is." (R. 1899.)

See Mr. Nay's evidence, R. 1828.

The unsoundness of the State's basis is further illustrated by the fact that a car that passes through the yard and is never touched by a switch engine is counted as two cars, one car in and one car out, while a car that is destined to the station and switched to an industry, sometimes a distance of several miles, is counted as but one car.

Exhibit 52, prepared and filed by H. B. Aumocek, a clerk in the auditing department of the railroad company,

shows the movement at division terminals of the principal through trains on the main lines of the St. Louis, Iron Mountain & Southern Railway during the month of October, 1907. He prepared thirty-seven sheets, representing as many different trains, which he testified were representative of the movements of all trains. Six of the statements were filed, constituting the exhibit referred to; the others were not filed in order to avoid unduly swelling the record, but were submitted to the attorneys and accountants for the State for inspection.

The first sheet shows that the through freight train coming into Hoxie from the north, which is the first division terminal station south of St. Louis in Arkansas, on October 1, 1907, arrived at 3:35 p. m.; that there were 49 cars in the train, which was No. 2-71, that is the second section of train No. 71. The same train went south on the main line as No. 55 at 11:20 p. m. the same day with 42 of the 49 cars it brought into Hoxie, arrived at Argenta at 2:20 p. m., October 2, with 60 cars, and pulled out of Argenta at 6 p. m. with 50 of the same cars that it brought into the station. Similar conditions are shown on all of the sheets at the same and other division points. The manner in which this exhibit was prepared and what appears on the face of the several sheets is explained by Mr. Aumocek. (R. 1769.)

Exhibit 53 is made up of the consist of freight train No. 55, the principal through freight train from St. Louis south on the main line of the St. Louis, Iron Mountain &

Southern Railway, during each day in the month of October. It was filed by B. W. Moore, the trainmaster. He was night yardmaster at the Argenta terminal in October, 1907, and his duty was to make up, receive and handle all freight trains. An extract from his testimony describing the arrangement with reference to the order and grouping of the cars as shown by the consist will be found in the extract from the opinion of the court, *supra*, 175.

He also describes the service rendered to various classes of cars in switching. Those for city delivery "would be switched to an assigned track in the terminal yard and then transferred to the industrial tracks either at East Little Rock, Little Rock proper, or Argenta, according to the location of the industry. If one or more cars were assigned to one industry and they were to come in a cut or group, they would remain intact; otherwise there would be a switching movement for each car. Cars destined to Alexandria, McGehee, and Monroe, on the Valley Line (the east and west main line) would be switched to an assigned track in the receiving yard and transferred from there to the Valley yard, about three-eighths of a mile distant, where they would be made up in train order. Cars destined to East Little Rock are first cut out of the train and placed on a make-up track in East Little Rock. That involves two switching movements. They are then switched to an assigned track or the transfer engine gets hold of them —that is a third switching movement. They are then transferred to the track from which they are unloaded, making four switchings. Cars that come in on through

trains going to industries have four times as much switching as those transferred to trains going east and west on the Fort Smith and Valley Divisions (being the east and west main line) of the Iron Mountain Railway. For instance, an industrial engine will operate on 75 cars as against 300 to 450 cars handled by the train line engine in ten hours' service. The average will run 75 industrial cars against 300 train line cars, and it costs from \$2.50 to \$3.00 per car for industrial switching. The distance is much greater. We receive our trains on receiving tracks convenient to the intersection of main lines, and our trains are handled as they are received, cutting out the industrial cars lined for such assigned tracks as we assign them for, and then our transfer engines are used for the purpose of moving them from those tracks to the industrial tracks." (R. 1773.)

He also testified that grain usually came in solid trains, and a good deal of cotton designed for compression was brought in in pick-up trains, that is, a train made up at Little Rock to go out and pick up all the cotton loaded on cars distributed for that purpose at way stations. The switching of these grain and cotton trains to the elevator and compress was made in one cut and one switching service would frequently move 20 or 30 cars.

H. V. Brown, terminal clerk of the Little Rock terminals in October, 1907, and now assistant yardmaster, referring to the through trains, testified:

"If they have sufficient tonnage into the Little Rock terminal and no deductions are to be made from the inbound train, there is nothing done to the train except to change the engines and caboose, provided there are no bad orders. Through cars are all en bloc. They are all switched in one operation of the train, to save switching at the various terminals. We receive the consist of these trains (at Little Rock) from a conductor frequently before they get very far out of Hoxie, by telegraph. If they have not sufficient tonnage into Little Rock, we arrange sufficient freight to fill out. That is usually done before the arrival of the train; the additional cars are either set on the hind end of the train or placed at the head end as the inbound engine is removed, as conditions will permit. In some instances it is handier to put them on the hind end of the train with the caboose and in other cases the cars might be so located that it would be quicker to put them on the front end of the train. The cars that come in on the train would be received and handled off the same track, and without any extra handling, barring bad orders, those cars going through to Texas." (R. 1804.)

John Cannon, who was superintendent of the Arkansas Division, testified:

"A through train starting out of St. Louis is made up of all the Texas loads switched together, all the Arkansas loads switched together, and all the Louisiana loads switched together. The short loads to be distributed to points out of St. Louis are arranged in station order. Those that are set out at Poplar Bluff are set out together.

"Train 55 out of St. Louis is a Texas train, filled out with Arkansas and Louisiana freight, which would be cut out at Little Rock." (R. 1801.)

In view of the statements of the witnesses, we submit that any division of yard and terminal expense on the basis of the number of cars handled at terminals in and out, putting all cars on an equality of service, is unwarranted.

The question as to how the division should be made seems to have been largely a matter of speculation among the State's experts. Mr. Willmering, one of these witnesses, testified that the expense of maintaining yard locomotives should be divided on the basis of yard engine mileage, repairs to freight cars on the car mile basis. Mr. Hillman, a public accountant and witness for the State, testified that the idea of dividing the maintenance of equipment expense between yard, local and through trains with certain percentages added "is a new one on me." The cost of yard service should be ascertained directly between state and interstate on the basis of the tons instead of dividing that item between local and through trains.

F. P. Johnson, chief accountant, St. Louis Iron Mountain & Southern Railway:

"If the total yard service, which amounts to \$293,000, were divided between state and interstate business, it would then result in the same percentage of that total expense being charged to state business as was used in the case of station service; or practically one-third of all the yard expense upon that basis would be charged to intrastate freight. And that would assume that every ton of interstate and every ton of trans-state freight received a full yard service within the State of Arkansas. In an amended exhibit (exhibit Y) the State has changed this method of dividing station service by eliminating trans-state freight, and if this was done to yard service as well it would result in a charge of almost 50 per cent of the total terminal expense, or practically \$140,000, being charged to state freight. The result would tend to very materially reduce the percentage of return upon the value of the property so far as the state freight is concerned.

"The yard and terminal expense is divided by the State in exhibit K first as between local and through trains, then

the expense apportioned to each class of trains is divided between state and interstate tonnage on the ton mile basis. The result of that is that \$26,560.81 has been charged to state traffic on account of yard service. (This amount is incorrectly stated as \$23,468.64 in the printed record. The figures quoted are those given by the witness in his deposition on file.) If we were to adopt the tonnage basis, Mr. Hillman's plan (Mr. Hillman was a witness for the State and testified that the cost of yard service should be ascertained directly between state and interstate traffic on the basis of the tons, instead of dividing it between local and through trains) and charge to interstate and trans-state freight one full terminal handling, then the proportion of the total expense that would be assigned to state freight would be \$97,782." (R. 1990.)

These differences fairly illustrate the elasticity of the State's theories and how easily they may be moulded to accomplish a desired end.

Transportation expenses involved in yard and terminal handling are analogous to station expense. They both relate to traffic rather than train expense and should be apportioned on the same basis.

(c) Fuel and Locomotive Expense:

(d) Road Enginemen and Trainmen Expense:

The test made on the St. Louis Southwestern Railway for the month of October, 1908, which has heretofore been referred to, showed that the cost of fuel and enginemen on through trains was 34 mills per train mile and on local trains 50 mills. The result of this test appears in exhibit 20, on pages 2376, 2377 of the record. It will be observed that the two items are consolidated and the combined cost

as above stated shown on the latter page. In preparing exhibit K, the State's accountants adopted the result of the test referred to, which showed that the local engines consumed $3\frac{1}{2}$ per cent more fuel per engine mile than the through engines, and divided the fuel cost on that basis; they divided the wages of trainmen on the railway company's records for October, 1907. They pursued the same method with regard to the St. Louis Southwestern Railway, except that they used the October, 1908, test in dividing wages of trainmen.

The court, following the line pursued by the State in regard to fuel and wages, took the consolidated cost of the two items as shown on exhibit 20 as the basis of its division, and found that the cost of fuel and wages, combined, per train mile on local trains is 50 mills and on through trains, 34 mills, a difference of 47 per cent, and charged the local trains with 47 per cent greater cost for those items. (Op. 86.)

The difference is too small to be of much importance, but if the court erred it was in favor of appellants in the application of the ratios obtained from the St. Louis Southwestern Railway in the test made in October, 1908, to fuel and locomotive expense on the St. Louis, Iron Mountain & Southern Railway. If it were worth while we could show by reference to the evidence that there was not that similarity of condition which justified the view upon which the State and the court acted, but inasmuch as the amount involved is not large we will not consume time in

pointing out the evidence. The appellant at least can not complain of the court's action, for if it is fair for the State to use a ratio applicable to fuel and locomotive expense as ascertained by the test of October, 1908, on the St. Louis Southwestern Railway, why is it not proper to use the same method with reference to both items as was done by the court?

The fact is, no accurate division can be made for any period of six months on the basis of one month's operation, on account of the difference in operating conditions brought about by the difference in the traffic handled in different periods and during different months. The record is full of evidence on that subject, and even a casual reading will impress any one with the dissimilarity in the conditions affecting operation at different periods.

As to all the remaining items of transportation expense except Other Train Expense, viz., Engine House Expense, Loss and Damage to Freight, Supervision and General, and General Expenses, the court followed the plan of division contained in exhibit K.

Engine House Expense—Is divided on the basis of the engine miles of each class of service during the month of October, assuming that the local engines require 12 per cent more engine house service per engine mile than the through engines. All the operating men who were examined upon the subject testified that that basis was wrong, because the engine house expenses are not in proportion to the mileage made by the engines, and the addition of 12 per cent to local

engines was inadequate because those engines do the larger part of the switching, are subject to harder usage, are longer per mile on the road, and for those reasons there is a considerable excess cost incident to engines engaged in local service.

Loss and Damage—Freight:

Loss and damage is divided between intrastate and interstate business on the basis of the actual claims paid during the month. It is interesting and instructive to note that the actual allocation of loss and damage to freight results in a charge of 24.29 per cent of the entire expense to intrastate freight, which is a larger percentage than the revenue basis would show, even with 100 per cent added for extra cost.

Supervision and General and General Expenses—Are apportioned to local and through, intrastate and interstate business, on the basis of the direct charges of each class.

The greater portion of general expense consists of salaries and expenses of employes in the general auditor's office, and in turn the larger part of the duties of that office is the accounting for the revenues of the company. It also includes the freight claim department and the legal department. The cost of maintenance-of-way and maintenance-of-equipment has nothing to do with this expense. A large part of it is legal expense, and an increase or decrease in the expense of the law department bears no relation to the expenses of the several operating depart-

ments. (See the evidence of F. P. Johnson, R. 1992, and C. R. Gray, R. 1906-7.)

Other Train Expenses:

This item is divided in exhibit K in proportion to the train miles of each class of service during the month of October. It includes, and the greater part of it is made up, of such items as wrecks, injuries to persons, damage to stock on right of way, fires set out by sparks, and could have been allocated to the local or through trains with the same degree of exactness as the loss and damage to freight was. The train mileage obviously has nothing to do with that class of expense, and it was a mistake to apportion it on train mileage. The court divided it on the basis of the gross earnings of each class of traffic during the six months' period, which was a far better method than that adopted by the State.

METHOD OF DIVIDING TRAIN COST BETWEEN INTRASTATE AND INTERSTATE BUSINESS.

In dividing train cost between intrastate and interstate business the State applied the ton mile theory.

They took the proportion of the ton miles of each class moved on local and through trains in the month of October, as shown in exhibit 1, as follows: On local trains 39.10 per cent of all intrastate and 8.70 per cent of all interstate; on through trains 60.90 per cent of all intrastate and 91.30 per cent of all interstate. Assuming that the same relative conditions would exist during the six months' period, the total ton miles of intrastate and interstate freight handled during that period was divided between local and through service in the proportions ascertained for the month of October, and in that way they determined the aggregate ton miles of each class of freight carried on local and through trains, and divided the train cost between intrastate business and interstate business in the proportions that the ton miles of each class bore to the total ton miles handled on local and through trains during the six months' period. The result was that they charged 26 per cent of the cost of local trains to intrastate business and 74 per cent to interstate business, and 4.96 per cent of the cost of through trains to intrastate business and 95.04 per cent to interstate business.

The percentages used by the State in dividing the cost of local and through trains are inconsistent with the scheme

of division as applied to detailed items, and work an injustice to the intrastate business.

In dividing the separate items of train cost between local and through trains for the six months' period, the factors obtained from the traffic in October were used. To illustrate: In dividing "Maintenance of way and structures" they found that 16.98 per cent of the engine and car miles of October was chargeable to local trains and 83.02 per cent to through trains, and they say "that month being considered representative of the business for the six months ended December 31, 1907," we will divide the total expense for the six months' period between the two classes of trains on that basis. In dividing the expense of locomotives under the head of "Maintenance-of-equipment" they ascertained the percentage of locomotive mileage chargeable to each class of service during October and divided the total expense for the six months on the same ratios as the mileage of each class bore to the total.

The average ton mileage of each class of trains expressed in percentages is shown on exhibit I, and is as follows: On local trains 28.51 per cent of intrastate and 71.49 per cent of interstate; through trains 5.59 per cent intrastate, 94.41 per cent interstate.

In the final division of train cost they change their factors by taking the proportions of the aggregate ton miles for the six months as the percentage upon which to divide train cost, thereby charging 26 per cent of local train cost to intrastate business and 74 per cent to interstate

business; to through trains 4.96 per cent to intrastate business and 95.04 per cent to interstate business. This results in a reduction of practically 2½ per cent in the total expense of intrastate business on local trains and two-thirds of 1 per cent on through trains, and applied to the large figures makes a material difference in the amounts.

But assuming, for the sake of argument, that the State's method in dividing the train cost is correct down to this point, it must next be determined if that cost was properly apportioned between intrastate and interstate freight carried on the two classes of trains.

THIS QUESTION INVOLVES THE RELATIVE COST OF TRANSPORTING STATE AND INTERSTATE TRAFFIC.

It is conceded by all intelligent railroad officials and has been found and held in a number of decisions that there is a material difference in the expense of conducting the two classes of business. This was referred to in *Ames v. Union Pacific Railway*, *supra*, and *C. M. & St. P. v. Tompkins*, *supra*, where Mr. Justice Brewer said the testimony of experts familiar with railroad business is not to be disregarded simply because it can not demonstrate by figures the exact amount or per cent of extra cost. *C. M. & St. P. Railway v. Keyes*, *supra*; *In re Arkansas Rates*, *supra*, where Judge Vandevanter said that the extra cost of freight was at least one hundred per cent more and that of passengers at least fifteen per cent more.

Judge Hook, in M., K. & T. R. R. Co. v. Love, 177 Fed. 493, 499, said:

"Bearing on the division of expense is the much controverted question of extra cost of the local business as compared with the interstate. That the former costs much more than the latter is beyond doubt, but the difficulty is in applying the measure of difference. There is a general accord among practical railroad men of high standing and long experience that the cost of local freight traffic is from two to eight times as much as that of interstate traffic, and of local passenger traffic from twenty-five to fifty per cent more than the other. Though not altogether clear from the proofs here it is probable the difference mentioned in the freight traffic should not be fully applied in addition to a division on the revenue basis, for, as already seen, the difference finds expression, in a measure, in the relative revenue proportions themselves. A cogent reason for selecting the revenue basis in preference to the ton mile is that the former gives some effect to the known differences in cost."

Judge Trieber in the opinion in these cases said:

"That there is a material difference between the expense of state and interstate business is conceded by all.

"The lowest estimate made by any witness for complainants seems to be that it is at least 200 per cent greater, while some estimate it as much as 700 per cent. The witnesses for the railroads do not base their opinions upon itemized statements, as no records were kept by either of the roads for the purpose of dividing the expenses between the state and interstate business, but as all these witnesses are men who have been engaged in railroad work and connected with railroads from their earliest manhood, starting at the bottom of the ladder and now occupying most responsible positions, some as general managers, controllers, auditors, superintendents and other high positions, it is claimed that their testimony, based upon their great experience, should be controlling." (Opinion, pp. 69, 70.)

F. E. Ward, General Manager of the Chicago, Burlington & Quincy Railway, testified that the extra cost of intrastate freight service was more than five to one. (R. 729.) I. G. Rawn, President of the Chicago, Indianapolis & Louisville Railway, testified that the intrastate freight service cost at least three and a half times more than the interstate. (R. 676.) E. D. Sewall, Assistant to the President of the C., M. & St. P. Railway and Vice President of the Chicago, Milwaukee & Puget Sound Railway, testified that the extra cost of freight service was four to one. (R. 707.) W. M. Whitenton, the General Manager of the Chicago, Rock Island & Pacific Railway Company, in Oklahoma, Arkansas and Louisiana, said it cost from four to seven times more to conduct intrastate freight service. (R. 757.) W. J. McKee, General Superintendent of the Missouri-Pacific Railway Company, said that the intrastate freight service cost from four to five times as much as the interstate. (R. 694.) C. J. McPherson testified that the extra cost was five times as much. (R. 327.) W. B. Dodridge, four to six times as much. (R. 463-4.) Carl Gray, Vice President and General Manager of the St. Louis & San Francisco Railroad, three to five times as much. (R. 1908.)

These witnesses are all men of great practical experience in railroad operation. All of them rose from subordinate positions, and their experience covered all phases of railroad operation. No witness was produced on the part of the State who had had experience in operation that would qualify him to testify as an expert.

The State's witnesses were H. Wilmering, who was cashier and afterwards agent at a local station in Oklahoma, and was at the time of testifying auditor of the Oklahoma Corporation Commission since the latter part of 1907; C. S. Ludlam, an accountant connected with Haskins & Sells, public accountants representing the State in these cases, and who had never had any experience except in a limited way in the accounting department in railroad service; T. A. Hamilton, an accountant in the employment of Haskins & Sells; he was employed while quite young in the accounting department of a railroad, was afterwards employed by the Illinois Central Railroad and Louisville & Nashville as a bill clerk and for a time as chief clerk to the commercial agent of the latter road. G. W. Hillman, a public accountant. C. B. Bee, a young man about thirty years old; at the time he testified the rate clerk of the Oklahoma Corporation Commission. He had had some experience on Mexican railroads as stenographer, voucher and damage clerk, as handy man to the superintendent of the road, and was a short time commercial agent. He was engaged in this service from five to seven years, and testified that he was very familiar with all operating conditions. He came to Little Rock, the chief terminal division point in Arkansas, for the purpose of investigating operating conditions on the Iron Mountain Railroad in order to qualify himself as a witness in these cases. He spent a day and a half there, but testified that he did not visit the shops or yards where operations were conducted. W. E. Fitzgerald, the auditor and expert accountant of the Railroad Commission of the State

of Texas since 1909, and who previous to that time had been employed in the accounting department of the Texas railroads in the capacity of voucher clerk, general book-keeper and chief clerk in charge of disbursement accounts; and R. D. Parker, a civil engineer by profession, and employed by the Texas Railroad Commission as expert engineer since 1909. He was thirty-two years old, had taken a course in the Texas University in engineering, and been engaged in railroad location and construction prior to the time he entered the service of the Texas Commission. He testified that he had for the last four years of his railroad service been engaged in directing the maintenance-of-way forces, and it was necessary for him to be practically two-thirds of his time on the road riding on passenger trains or freight trains and in and about yards and terminals.

These were the witnesses examined by the State on this point. We have taken some pains to call attention to their qualifications, as it was described by themselves, because they were introduced as experts upon a subject which of necessity required great familiarity with operating conditions, without which no one is qualified to testify in that capacity. We feel that the testimony introduced by plaintiffs on this subject is practically uncontradicted, because, without impeachment of the integrity of the State's witnesses, it may be fairly said that not one of them was qualified from experience and training to speak as an expert upon the subject.

Mr. F. E. Ward's testimony will be found at pages
725-729.

C. J. McPherson, pp. 321-327.

Mr. Sewall, pp. 703-709.

Mr. Rawn, pp. 672-678.

Mr. Whitenton, pp. 751-758.

Mr. Doddridge, pp. 457-466.

Mr. McKee, pp. 689-695.

Conditions affecting the relative cost are clearly and fully set forth by the plaintiffs' witnesses. We call attention particularly to the testimony of Mr. Ward and Mr. McPherson. Mr. Doddridge testified in regard to a test made under his direction on the St. Louis Southwestern Railway during the month of October, 1908, for the purpose of determining the relative cost. He describes the result as follows:

"The test shows on the basis of gross earnings the intra-state freight train expense for labor and fuel costs 5.5 times greater than the interstate. It shows that the cost of service and fuel for running the local train per mile to have been 47 per cent greater than the cost of running the through train per mile.

"It shows that the local train produces 129 ton miles of commercial freight for each mile run; and the through train produces 399 ton miles of commercial freight for each mile run.

"The average number of loaded cars per train mile in through trains was 23, or 72 per cent of the total train.

"And in the local trains 11, or 69 per cent of the total train.

"The average number of empty cars per mile in the through train was 9, or 28 per cent of the total train; in the local trains 5, or 31 per cent of the total trains.

"The average number of all cars per train mile in through trains was 32, and in local 16.

"Seventy-eight per cent of all intrastate business was handled on local trains. The remaining state freight, 22 per cent, was handled on through trains; 92 per cent of the total interstate business was handled on through trains, 8 per cent of the total interstate freight was handled on local trains. Of company freight, 49 tons to each mile run was carried on through trains; 21 tons for each mile run was carried on local trains.

"The average tons of all dead weight (that is non-revenue weight), which includes the weight of the locomotives, cabooses, company freight and all cars per train mile, was 734 tons on through trains and 397 tons on local trains.

"The through trains carried more than three times as much commercial business per mile run as the local trains, but required less than two times as much dead weight.

"The average tons of dead weight to a ton mile of commercial freight was:

"Less than carload, through trains, 4.50 tons.

"Local trains, 9.44 tons.

"Carload, through trains, 1.62 tons.

"Local trains, 1.90 tons.

"Both, through trains, 1.84 tons.

"Local trains, 4.09 tons.

"The per cent of dead weight to gross weight on through trains was 65 per cent.

"On local trains, 76 per cent.

"The per cent of overtime to total wages of train and enginemen was 5 per cent on through trains and 19 per cent on local trains." (R. 459, 460.)

IN APPORTIONING TRAIN COST BETWEEN INTRASTATE AND INTERSTATE FREIGHT CARRIED ON LOCAL AND THROUGH TRAINS ON A STRAIGHT TON MILE BASIS, WITHOUT ANY ALLOWANCE FOR EXTRA COST, THE STATE DISREGARDED MANY IMPORTANT ELEMENTS OF EXTRA COST THAT ARE INDEPENDENT OF TRAIN COST AND GROW OUT OF DIFFERENCES IN INTRASTATE AND INTERSTATE TRAFFIC, AND ARE NOT PROVIDED FOR IN THE STATE'S SCHEME OF DIVISION.

Learned counsel conceded that the ton mile was not a proper unit for dividing total expenses, and said that under no circumstances would he use the ton mile for dividing the total expenses, and yet that is what was done under this division of the exhibit. The entire train expense, both local and through, amounting to \$2,592,298.35, or 84 per cent of the total operating expense, is thus divided.

Counsel further said that the objection to the ton mile basis, as to its inequalities and disregard of the character of the tonnage, has been met and provided for in the State's scheme of division.

No attempt was made in dividing train cost to provide for any element of extra expense except that growing out of the difference in the service for which the equipment is used in local and through service. The arbitrary allowances made under the several headings used in the exhibit in connection with train cost has no application, even the most

remote, to that difference in expense which grows out of the traffic and does not result from or depend upon the physical handling of trains. Mr. Wharton's attention was specially directed to this question while on the stand, and he was asked if, in the division of the expense, he had made any difference between state freight and interstate freight, and he testified that he had not; if there was any distinction it was not taken into consideration. (R. 1036.)

All the testimony in the record agrees that there is a difference in the cost of transporting different classes of commodities, growing out of the volume, space occupied, degree of care necessary for preservation, liability to damage, and various elements of that sort characteristic of different classes of commodities.

Witnesses were examined and a good deal of testimony taken on this proposition, to which we wish to call the court's attention. Mr. Ward's views were expressed as follows:

"The State has attempted to determine what is a proper method of distributing train and car costs between local and through trains. And when they have done that, according to the method adopted, they undertook, by taking into account the tonnage of state freight handled on local and through trains respectively, to ascertain the ton mile cost of handling such freight; and have assumed that the cost of handling a ton mile of state freight on a local and on a through train is the same as that of handling a ton mile of interstate freight on the same train. This assumption, in my opinion, is an erroneous one. It fails to recognize the fact, which I endeavored to point out in my previous testimony in this case, that the terminal handling of short-haul intrastate freight is more expensive per ton mile than of long-haul interstate freight. Many more car miles are re-

quired to handle a given number of intrastate, short-haul ton miles, than the same number of interstate, long-haul ton miles. A much larger amount of property and facilities is required to handle such a quantity of intrastate short-haul ton miles than of interstate long-haul ton miles.

"By this I mean that the station facilities at the local stations through any state, so far as my observations go, are, when measured by the ton miles, used to a very much greater extent than is the case with other business passing those stations, or even originating at or destined to those stations. In order to make myself clear on this point, I might explain that a ton of freight of a given kind received at a country station will not cost any more to unload from a car and deliver to a consignee if it has originated in the State than if it has originated in another state. But when the cost of handling that ton of freight is divided by the ton miles applicable to it, it makes a much heavier charge per ton to the short-haul intrastate ton than to the long-haul interstate ton.

"I might illustrate it by saying that I suppose the people of Arkansas, as in other states, buy a good deal of merchandise from mail-order houses like Sears, Roebuck & Co., and Montgomery Ward, of Chicago; let us imagine, if you like, the purchase by a man at a country station 25 miles south of Little Rock; say he buys a ton of merchandise of Sears, Roebuck & Co., and it is carried down to his station and is delivered to him from the same car and at the same time as is a ton of the same kind of freight which he needed in a hurry and purchased in Little Rock. The station expense at the delivering station, in such case, is exactly the same; each operation is precisely the same as the other. But when you measure it by the ton miles you have 25 miles to apply to that ton which came from Little Rock, and approximately 600 miles on the ton that came from Chicago; so there is, perhaps, 24 times more chargeable to the state ton than to the interstate ton in that station expense.

"Continuing in that statement of the matters that were overlooked in this assumption of the State's accountants, I would like to say that the various allowances made by the State's accountants, as shown in detail in exhibit K—such for instance, as extra mileage for engines on local trains on account of station switching, extra and excess cost of re-

pairs to yard engines, extra cost of repairing cars running in local trains, extra wear and tear on road-bed and structures through operation of local trains, etc., are to a large extent made necessary by the handling of this short-haul intrastate business.

"In fact, the assumptions made by the State's accountants omit some of the most essential factors, which, in my opinion, go to make up the large difference between the cost of handling the two classes of business.

"Referring to the long and short haul, I think that effect is illustrated by the example I gave of a ton of freight from Chicago compared with one from Little Rock, going to the station 25 miles south of Little Rock. The interstate long-haul ton has so many more miles to divide into that the expense per ton per mile is very, very much less.

"In the case in point, my recollection is that the average haul per ton of state business in Arkansas is 70 miles, and of the interstate per ton 224 miles. Both of those are the number of miles in the State of Arkansas, as I understand it. Whereas, as a matter of fact, the interstate and trans-state freight must move a very considerably greater number of miles than 224. So that the proportion of three to one does not actually hold good as applied to the whole situation.

Q. "Does the addition of 50 per cent to the car miles of local trains for switching at stations, as made under the head of "Maintenance of Way and Structures," provide for the actual expense of state over interstate business growing out of the fact that the larger part of the switching is chargeable to state freight?"

A. It does not. It seems to undertake to determine the cost of handling cars in local trains as against the cost of handling cars in through trains, but does not touch at all the cost of handling the freight in those trains, as between state and interstate.

Q. Would the allowance made there as between the two classes of trains cover the extra cost of handling the state freight over the interstate?

A. No, sir; in my opinion it would come very far from doing it.

Q. There is a similar allowance made under the head of "Maintenance of Locomotives." They have added 50 per cent to the mileage of yard locomotives to provide for possible extra maintenance due to yard service, and 50 per cent to the mileage of road engines used in local service to provide for switching in local service. The same is true of that, I suppose, is it, Mr. Ward?

A. Yes, sir.

Q. Allowance is made for starting and stopping and terminal handling. Is there an added element of extra cost on state over interstate freight that is not provided for in that allowance between local and through trains?

A. It seems to me that one great difficulty about the State's plan is that an attempt has been made to determine the cost of handling a local train as against a through train. In determining that, and in trying to determine it, a great many assumptions have been made which I cannot accept as being correct. But, after that is done, there still remains a number of very important factors which are not taken into account at all.

"If the State's method of determining the cost of the local as against the through trains worked out right, there still remains to be determined the question of how much more it costs to handle the state or short-haul freight in that train than the interstate or long-haul freight in that train. In fact, there is practically another question.

Q. "You testified when you were on the stand formerly in this case, that in your opinion it cost five times as much to transport state freight as interstate freight?"

A. I expressed that as my opinion as applied to this case.

Q. Are there any facts developed in this exhibit K (and the other exhibits filed in connection with it for the

purpose of developing the theory upon which the State is seeking to divide these expenses) which would change or affect your views in that regard, Mr. Ward?

A. I have given the subject a good deal of thought from time to time, because it has come up not only in this case, but in other states, in which I have been interested as a railroad man, and the more I think about it the more I am inclined to think that estimate was low and not high, as to the excess cost of state over interstate.

"The conditions, as they seem to me, point to the fact that I have stated it in quite low terms, and not at all too high. I certainly have not modified my opinion as to its being as much as that.

Q. "Mr. Ludlam, who is one of the State's accountants and whose firm prepared these exhibits we have been discussing, testified that the extra expense as developed by the method of division adopted by the State was 87 per cent; how do you account for the difference between the 87 per cent developed by the State under its method and the views expressed by you, and to which your attention was called a moment ago, that it costs five times as much?"

A. It is due in part to the erroneous assumptions that have been made here, in undertaking to divide the cost of local train service and through train service, and in part to the omission of those other elements to which I have referred. My opinion is, as it was before, that this is not a matter which can be determined by any proper system of accounting. It is one very difficult of solution, and the closest approach to an accurate result in the matter can be secured, in my opinion, by getting the views of operating officials who are in contact with this kind of work every day of their lives, and who are watching it, and who have had every opportunity to see under what conditions the various classes of traffic are handled. (R. 1864-1867.)

Q. Assume a case in which the average haul of state freight is say 70 miles and of intrastate 224 miles; how many cars would be required to move a given tonnage of state freight over the length of haul (224 miles) of interstate freight of equal tonnage?

A. Bearing in mind the conditions under which railroad cars are moved, there would be a greater use of the cars necessary than the mere difference in the mileage would indicate on its face. In that case there would be practically eight times as many cars required to handle the same tonnage in state as in interstate business.

"I have in mind, in making that statement that on each one of the short hauls, comprising the total required to equalize the ton miles for the state and interstate, that there would be a free time allowance for both the loading and unloading of the freight; and in that case almost universally throughout the country that free time is 48 hours.

"So, there would be not only a difference in the mileage but a difference in the time, because of the necessity for getting additional cars, and the time the cars were delayed by reason of the free time allowance under ordinary railroad regulations.

Q. "You stated a moment ago it would require eight times as many cars for state freight to carry the tonnage that would be required for the interstate freight; does that cover the free time or does the free time you speak of, 48 hours for loading and unloading, have any effect in increasing that disparity?

A. I think that would just about double it, because without the free time there is the stoppage at each of the short-haul points and the 48 hours added in each case, would more than double it. It would need a pencil and paper calculation to know exactly what that means, but it would run a good deal more than double.

Q. I simply want to get at the facts in a general way. What difference is there in the terminal service as between state and interstate freight, and what effect does that difference have upon the relative cost of the handling of the two kinds of freight?

A. In state business there is necessarily two terminal handlings; the freight has to be loaded and unloaded twice; and all of the expense in connection with the billing and checking and expensing is double in case of the state freight.

"The interstate freight never has more than one handling and if it happens to be trans-state freight there is no handling in a given state. And then the difference in the length of haul would make a marked difference, because wiping out state lines altogether, the longer the haul the less the cost per ton per mile would be for station service, because you have a much greater figure into which to divide that cost." (R. 727, 728.)

Mr. McPherson, referring to a number of the elements of extra cost that can not be included in the method of dividing between local and through trains as proposed by the State, testified:

"First: There is a greater use of the railway facilities in proportion to tonnage by the intrastate freight traffic, a greater cost of maintenance, and a heavier terminal cost, than for interstate freight traffic. The railway secures less efficiency from its cars used in intrastate freight traffic, in proportion to the relative tonnage, than in the interstate freight traffic; a greater investment in cars is necessary, and there is a larger cost for maintenance of cars in intrastate traffic than in interstate traffic, in proportion to the respective tonnage.

"My opinion is formed from an application of the facts to the exhibits in this case, from years of personal observation, from reports made periodically in my office, which I study and compare.

"Exhibit No. 26 shows that 51.16 per cent of all the ton miles of freight traffic moved by this railway in the State of Arkansas, in the period named, consisted of trans-state traffic, traffic that originated outside of Arkansas and passed through that State into other states. This is more than one-half of the entire freight traffic on the ton mile basis, that the railway moved during the period." (R. 321.)

In discussing Mr. McPherson's testimony, counsel assumed that he disregarded almost entirely the use of the facilities in connection with trans-state freight; on the con-

trary he made a liberal allowance for the use of the state facilities by the trans-state business. He said:

"The trans-state traffic merely passes through the State and uses but a part of the facilities provided by the railway for handling its business. This trans-state traffic does not require or use the station organization, the agents, cashiers, collectors, bill clerks, check clerks, and the numerous other classes of station labor, except yard clerks, who record car numbers and make out car reports; and the callers, who call the men that man the trains.

"It makes no use of station buildings, except the portion assigned for telegraph purposes; nor of house tracks, where cars are loaded and unloaded; nor of team and public tracks, where car-load freight is received and delivered; nor of tracks to elevators and industries, such as mills, warehouses, coal and lumber yards, storage yards and manufacturing establishments; nor of many buildings and other facilities which are provided to care for traffic, either originating in or destined to points within the State.

"The trans-state traffic could be handled with equal dispatch without the facilities I have mentioned. It is attended with very small terminal cost. The traffic is gathered, weighed, loaded, and billed in another state through to destination and requires no accounting nor station labor in Arkansas, except yard and car record clerks, as previously explained. In the orderly handling of business there are no reasons for trans-state freight which simply passes through the State to incur but a minor expense at division yards and junctions; but in practical operation, both intrastate and interstate cars are added to trains in which this traffic is moved, to secure the full efficiency, as far as possible, of the locomotives.

"The making up of trains is but a part of the yard work, the engines engaged in such service in classification yards handling cars in large cuts, and without extended movements, while in the other yard work, that of switching to the house and team tracks, and the delivery of cars to and taking them from industries, mills and warehouses widely scattered, with but a few cars to a trip (sometimes only one)

consumes time in both the gathering and distributing of this traffic, which is wholly intrastate and interstate, and none of it trans-state.

"Assuming that such physical handling as is given in these yards to trans-state traffic should be a charge against such traffic (which is not, in my opinion, equitable or proper), 15 per cent of the yard service in Arkansas would be a liberal allowance therefor.

"That is to say, not more than 15 per cent of the entire cost for yard service and general yard expenses would attach to 51.16 per cent of the freight traffic.

"Eighty-five per cent of the entire yard cost and expense would attach to 48.84 per cent, which comprised the intrastate and interstate freight traffic.

"The yard expense amounts to 13 per cent of the total expense of operation in Arkansas, or \$398,806 for the six months, July to December, 1907.

"Of the station expense, which forms 5 per cent of the entire expense of operation in Arkansas, or \$165,258, in the six months, this 51.16 per cent of traffic would make use of only the yard clerks and car record clerks to the points where records of trans-state traffic were taken.

"The total expense for these clerks at such points amounts to 8.5 per cent of station expense, and but a part of these clerks perform duties incident to such traffic.

"The trans-state freight traffic forming more than one-half of the entire traffic of the State, as measured by ton miles, could, on the most liberal construction, make use of but 15 per cent of yard service, as against 48.84 per cent constituting the intra and interstate traffic making use of 85 per cent of yard service, and but a part of 8½ per cent of station expenses.

"Measured by ton miles, the freight traffic touching Arkansas in the month of October, 1907, the month analyzed, was: Trans-state, 51.16 per cent; interstate, 40.69 per cent; intrastate, 8.15 per cent.

"Eliminating the trans-state from consideration, the relation between the interstate and the intrastate traffic becomes 83.3 per cent interstate and 16.7 per cent intrastate. As 48.84 per cent of the traffic uses all of these facilities, the relation of the intrastate traffic to the 48.84 per cent (the interstate and intrastate combined) is 16.7 per cent. Let me explain here that the term or expression 'terminal expense' or 'terminal cost' is used in a broad sense, and means the station and yard expense not only at district and division terminals, but at all stations; it also embraces the cost of maintenance of switch engines and sidetracks other than passing tracks, as every station is a terminal for the traffic that it originates or receives.

"Every shipment of freight, big and little, regardless of the length of haul, must have two terminal expenses. Trans-state freight has no terminal expense within the State. The expense at the starting point and at the destination is a part of the expense of operation of other states, and in the exhibits of cost filed in this State none of those expenses are contained for trans-state freight.

"Strictly interstate freight, that which originates or terminates in the State of Arkansas, has but one of these terminal expenses. The other terminal expense is a charge to the operation of some other state.

"Every intrastate shipment in Arkansas has two terminal expenses within the State." (R. 321-3.)

The witness then (R. 324) illustrated the difference between the long and short haul represented in state and interstate traffic by examples which show that it will require eight cars to handle the same amount of freight in state traffic as would be handled by one car in interstate traffic, and proceeds:

"Exhibit 5 shows that for the six months ending December 31, 1907, the average length of haul of all intrastate freight was 70 miles; while the average length of haul of all interstate freight in Arkansas was 224 miles.

"This means that each shipment of interstate freight moves on an average of 224 miles with but one terminal expense, either that of forwarding or delivering. Each intrastate shipment moves on an average of but 70 miles and incurs two terminal costs for that distance. It follows that to attain the same average length of haul as the interstate that eight terminal costs must be incurred by intrastate freight. That is, eight times the use of the terminal facilities must be made by intrastate freight as compared with one use of the facilities by interstate freight.

"The interstate shipment goes 224 miles for one terminal expense. The intrastate shipment goes but 70 miles and has two terminal expenses.

"Therefore, say for example, ten tons of interstate freight is moved 224 miles with but one gathering or distributing cost; and ten tons of intrastate freight go but 70 miles with both the gathering and distributing expenses.

"The intrastate ten tons shipment goes 70 miles, with two terminal expenses, another ten tons goes 70 miles further, with two more terminal expenses; a third ten tons goes another 70 miles more with two more terminal expenses; and a fourth ten tons the balance of the distance with two more terminal costs to equal a single interstate shipment.

"Ten tons of freight had been loaded four times and unloaded four times, making eight handlings of the intrastate movement of ten tons, while it is going 224 miles; while ten tons of interstate freight has been loaded or unloaded but once in moving this same distance.

"For the purpose of further illustration, we will take the exact distance that we used before, as that represents the average length of haul of the interstate and the intrastate freight.

"The distance from Texarkana to Nuckles, Ark., is 224 miles, the same distance as the average miles moved by every interstate shipment, in Arkansas. (R. 323-4.)

"A car loaded with twenty tons of freight in Texas for Nuckles passes Texarkana and comes through to Nuckles,

where it is put on a sidetrack, unloaded, and charges collected by the agent and remitted, and the other accounting work incident to the transaction is completed. The car makes 4480 ton miles, that is 20 tons multiplied by the distance, 224 miles.

"The distance from Corning to Nuckles is 70 miles, the same distance as the average number of miles made by every intrastate shipment in Arkansas.

"Three cars containing 20 tons are loaded at Corning and moved to Nuckles, making 4200 ton miles. One car, containing 20 tons, is loaded at Tuckerman and moved to Nuckles (a distance of 14 miles, which, added to the mileage of the three cars, is equivalent to the interstate haul of 224 miles), making 280 ton miles. The four cars making 4480 ton miles, the equivalent in that respect to the interstate shipment of one car 224 miles. Four cars are required to take care of the average intrastate shipment as against one car for the average interstate shipment. Three cars must be set at Corning and one at Tuckerman, or a total of four cars for loading.

"These must be loaded, weighed, billed, and all of the accounting features observed at the loading station; and the same four cars must be set for unloading at Nuckles; unloaded, charges collected and remitted and all accounting features incident to the transaction at that end of the journey completed. Each of these four cars has borne a terminal expense at origin and at destination, making eight terminal expenses, as compared with a single terminal expense of the interstate shipment at Nuckles. The other terminal expenses on that shipment, the setting the car for loading, its billing, weighing, and the other steps incident to its preparation for movement, are borne by the station at which the car was loaded in Texas.

"The cost of handling business is dependent upon the number of times the terminal is used.

"The four intrastate shipments referred to require the services of the station and yard forces, and the use of facilities eight times, to move the twenty tons the same number of ton miles as the single interstate shipment which

made the use of station and yard forces and other facilities in the State but once.

"The terminal cost of a shipment five miles is as great as on a shipment of 50 miles or 150 miles or, in fact, any distance; and the terminal cost to the St. Louis, Iron Mountain & Southern Railway in Arkansas for the six months, July to December, 1907, inclusive, was 18 per cent of the entire cost of operation, or \$564,064.

"In intrastate traffic a greater number of cars is required and a larger investment required in freight car equipment than is required in interstate traffic.

"Even assuming that the average tons loading per car in interstate and intrastate traffic is equal; that is, that each car loaded in each class of traffic contains the same number of tons, four cars to one are necessary to be employed in handling the intrastate over interstate traffic, to secure the same number of ton miles.

"This, however, as I have explained before, is not the true ratio. Under the railway practice, and under the laws of Arkansas, forty-eight hours are allowed the shipper for loading and forty-eight hours are allowed the consignee for unloading every car.

"This means, in going back to the illustration just made, that the interstate shipment to Nuckles would result in the company being deprived of the use of one car for forty-eight hours, while in the four intrastate shipments the company would be deprived of four cars ninety-six hours each, or 384 hours.

"Reducing this to days the railway company would lose the use of the car containing the interstate shipment two days; while it would be deprived of the use of the four cars in the intrastate shipment sixteen days. This makes the ratio eight to one.

"Eight cars for the use of intrastate freight as against one car in interstate freight.

"As I have explained before, even though the full forty-eight hours were not used in every case, that is to say if the average were lower, if it were one and one-half days or one and one-quarter days or one day, the ratio would remain the same, eight to one.

"The standard freight car of today costs \$900, and the relative investment in freight cars in the illustration used for the intrastate and interstate traffic would be \$7,200 for the intrastate cars and \$900 for the interstate car. This investment is a part of the cost of road and equipment, and the larger investment places additional burdens upon the railway company to earn the interest necessary to carry it, in the ratio of eight to one for intrastate over interstate traffic.

"The cost of maintenance of cars is greater in the intrastate than in the interstate traffic. As I have illustrated it heretofore, eight cars must be provided to handle the same tonnage of intrastate traffic as can be handled with one car in interstate traffic. This naturally increases the proportion of cost of freight car maintenance in intrastate traffic over interstate traffic.

"Depreciation is also going on with eight cars as against one car equivalent in interstate traffic. The ratio would be eight to one. The maintenance of cars is a large item in the expense of operation, amounting to 12 per cent of the entire freight cost in Arkansas during the six months, July to December, 1907, inclusive.

"The depreciation would be eight times as great in the intrastate traffic as in the interstate traffic. And this depreciation on all cars for the purpose of complying with the requirements of classification prescribed by the Interstate Commerce Commission was established at three per cent per annum, or \$27.00 per car per annum, on the standard car of today. The relative depreciation therefore would be \$216 per annum for the eight cars in the intrastate traffic as against \$27 per annum for the single car in the interstate traffic. The ratio would be eight to one. The repairs to freight cars averaged \$63.20 each in 1907, and this is fairly representative. As the use of freight cars in intrastate traffic to reach the same ton mile equivalent is eight times

that of interstate traffic, the maintenance would be at the ratio of \$505.84 for eight cars per annum, as against \$63.23 for one car per annum for interstate traffic, in the ratio of eight to one.

"From my practical experience in railway operation and for the reasons I have given, and for other reasons, in my opinion, the cost of handling intrastate traffic is at least five times as great as that of handling interstate traffic, on the basis of quantity, or more than double the cost on the basis of revenue, as shown in these exhibits." (R. 323-327.)

Mr. Gray, referring to the ton mile division, said:

"It is very unsatisfactory because it does not satisfactorily take into account the increased elements of cost as between the handling of intrastate on one hand and inter or trans-state freight on the other hand. One of which, and a very potent one, is on account of the difference in haul and the difference in the expense of handling.

"My judgment for a long time, as the result of giving such study to this mooted question as I could, such intelligent study as I was capable of, has been that the cost of handling intrastate freight business as against the cost of handling interstate and trans-state freight business, under the conditions which prevail in the Southwest, in practically any of the states in the Southwest with which I am familiar, will run from three to five times as much. In the subsequent study I have given the matter I would be inclined, if I changed at all, to raise the range of that cost."

Referring to exhibit K, after pointing out other objections, he said: "But above all, remains the fact that a proper allowance has not been made for the relative cost of the two classes of business." (R. 1907, 1908, 1909.)

See the evidence of Mr. Nay, R. 1838; Mr. Doddridge, R. 454.

The State's accountants, in preparing exhibit K, seemed to labor under the impression that the question at issue in this case was not so much the cost of state and interstate freight, but rather the cost of operating local and through trains.

THE FINDINGS OF THE COURT IN REGARD TO EXTRA COST OF INTRASTATE FREIGHT TRAFFIC.

The court found (page 69) that the actual difference between the expense of local and through trains per ton mile, as shown by the State's accountants in their exhibits and testified to by Mr. Hamilton, was 162.67 per cent. (R. 1591.) The extra cost of the intrastate freight, however, was greatly reduced by reason of the large amount of inter and trans-state freight placed upon the local trains as the result of the State's method of compiling exhibit "I," showing the tonnage carried upon each class of trains, the net result being that the cost of the intrastate freight carried on both classes of trains was 87 per cent more per ton per mile than the interstate freight.

After making various changes in the basis adopted by the State the court furnished the formula upon which the accountants for both sides were requested to compile the final statement, which appears as exhibit A to the court's opinion found at pages 106-116. The result of the compilation based upon these modified formulas shows that the average cost of intrastate freight per ton per mile was

201.5 per cent more than the cost per ton per mile of handling interstate freight.

Upon a careful investigation of the difference in the rates charged for intrastate and interstate freight the court found (pages 58-68) that the intrastate rates in force at the time of the institution of these actions and in 1907 were 50 per cent higher than the inter and trans-state rates per ton per mile. The result of this investigation made by the court would tend to reduce the proportion of the various items of operating expense chargeable to intrastate freight only on such accounts as the court instructed should be divided upon the revenue basis. This excess of 50 per cent in the intrastate rates would not affect the entire division of the operating expenses, as but a small proportion of the total expense was divided between state and interstate freight upon the gross revenue basis under the formulas adopted by the court. They cover the following items. Maintenance of way and structures, traffic expense, and miscellaneous or other train expense, and only those items are affected by the increase in the intrastate rates as compared with interstate rates.

The court also found from the evidence that in preparing the formulas or bases of division the accountants for the State disregarded elements of expense which add materially to the cost of the local as compared with the through traffic, and which should be taken into consideration in determining the difference in cost. While it was impossible to express the result of these omissions in percentages, the court finds

that they were of enough importance to be considered. The omissions referred to include such items as the difference in dead weight on local and through trains, demurrage charged on cars in other states, which was not represented in the figures submitted in the case and which has a very important bearing upon the relative cost of the two classes of traffic, especially when the entire length of haul is taken into consideration. The percentage of freight in less than carload lots on local and through trains was an item of extra expense that could not be provided for by the formulas adopted. The reciprocal tonnage based upon the movement of interstate freight, such as the movement of lumber to the North being counterbalanced by the movement of grain to the South, was another item. After considering the various items mentioned above, and others, the court found that, taking into consideration the differences between the intrastate and interstate rates for like commodities and like hauls on the one hand, and the various items that were omitted as mentioned above on the other, there should be an additional charge of 8½ per cent added to the percentage of extra cost found by the accountants as the result of their calculations based upon the formulas submitted by the court, the result being that the extra cost of handling intra-state freight on the St. Louis, Iron Mountain & Southern Railway was found to be 210 per cent. (Opinion 90-92.)

The court found from the evidence that the conditions on the St. Louis Southwestern Railway Company were somewhat different from those existing upon the lines of the

St. Louis, Iron Mountain & Southern Railway; that the trans-state freight was almost 65 per cent of the total freight moved as compared with only 51 per cent on the St. Louis, Iron Mountain & Southern. It was also found that the average length of haul is shorter for the intrastate freight than it was upon the St. Louis, Iron Mountain & Southern, and the difference between the length of the intrastate and interstate haul was greater. There were other matters which added to the increased cost of local business, and taking into consideration all of these differences in conditions upon the two roads, the court found that an additional allowance of 40 per cent should be added to the percentage of extra cost, making that percentage 250 per cent. This was done after making necessary allowance for a reduction on account of a like difference of 50 per cent in the rates charged for the two classes of traffic.

(Opinion 93-94.)

THE STATE'S DIVISION IS BASED UPON A FALSE ASSUMPTION AS TO THE TON MILES OF INTRA AND INTER-STATE FREIGHT HANDLED ON THROUGH AND LOCAL TRAINS.

Every operating man who testified stated that much the larger part of the intrastate freight is carried on local trains.

C. J. Lincoln, a witness introduced by the State, testified that—

“The interstate traffic is very largely handled on through trains, state traffic is handled on local trains very largely.” (R. 967.)

W. B. Doddridge:

“The great bulk of intrastate freight is carried on local or way trains, in common with such interstate freight as there may be for distribution or collection.” (R. 457.)

I. G. Rawn:

“I would think that the local train would carry a great preponderance of state freight.” (R. 680.)

F. E. Ward:

“State freight being short haul freight is usually carried on the way freights. Interstate freight being long haul is ordinarily handled on through freight trains that run through from one terminal to another. The way freight or local train is one which carries the short haul freight going to towns intermediate between the terminals, either carload or less than carload, and those trains ‘peddle’ as we call it; that is, load and unload the small lots of less than carload freight, and they spot the cars for the local station, do all the station switching, and are practically traveling

switching trains to do the miscellaneous work that has to be done between terminals. The through freights are trains which are made up as nearly as possible of a unit of size, based upon the cars on the line over which they run and the power that is used there, and on those trains freight destined to distant points is carried, so that in handling that freight is not disturbed. There is no switching or other expense put on to it. It is carried through from one terminal to another terminal ordinarily." (R. 723-5; also 734-5.)

W. M. Whittenton:

"The state business is largely a short haul business and for that reason it is naturally handled on the local freight trains. (R. 758.)

The test made on the St. Louis Southwestern Railway in October, 1908, showed from actual observation and count that 22 per cent of intrastate freight was carried on through trains and 78 per cent on local trains. The nature of the business itself would indicate that that is the case. Local trains are operated largely for the purpose of distributing local intrastate freights. The long haul traffic, which is composed almost entirely of interstate and trans-state freight, is most economically handled on the through trains to avoid the numerous stops made by local trains for switching at junction and terminal points and for distribution at all way stations. It is for that reason the local trains do a large amount of switching at way stations while through trains do scarcely any. Pretty much all the freight that originates in and is destined to points within the State is moved on local trains. It would naturally follow that a very large proportion of that class of freight would be carried on local trains, and yet it is assumed in exhibit "K"

that 61 per cent of intrastate ton mileage was moved on through trains and 39 per cent on local trains. Such a showing is so contrary to natural conditions that it requires explanation, and it is explained in the record by the peculiar abnormal condition in regard to the handling and movement of freights in the month of October, 1907, growing out of the congestion that existed at that time. We will use the language of the witnesses who handled or superintended the handling and movements of freights, in describing the condition that existed and its effect.

John Cannon, Superintendent of the Arkansas Division, testified :

"During the fall of 1907, on account of the very heavy movement of business, we departed from our usual practice in loading our local trains. The local trains during normal times handled nothing but less than carload freight and what we call 'short loads'; that is, loads destined to stations on the local train territory. During the fall of 1907, in addition to that class of loading the locals were filled up to nearly the maximum tonnage with through loads, loads that went an entire distance over the district the local was run on. That excess tonnage ran all the way from 300 to 800 tons per day.

"Most of it was interstate traffic. Of course, there was a lot of state traffic handled also. But the major part of it was interstate freight, through loads that were ordinarily handled in our through trains going to St. Louis or Memphis and to points in Texas or Louisiana." (R. 1797-8.)

H. V. Brown, the terminal clerk, testified that he handled the waybills every day, went over them and checked up the local condition in the yard and made detailed reports as to the movement of freight in and out of the yard. It gave

him a pretty good idea as to what they were handling. The congestion in October, 1907, increased the tonnage on the local freights. I think the local in normal times handled at least 70 per cent of the state freight and not to exceed 30 per cent of the interstate freight. The proportion of interstate freight carried on local trains was increased considerably at the time on account of the through loads that were being put on the locals in order to facilitate the movement of cars. I should estimate that upwards of 60 per cent of the freight carried on local trains was interstate. (R. 1805-6.)

B. W. Moore, the night yardmaster, testified that usually the through trains are loaded to the rated capacity of the engine, but that the local trains are not loaded to the full capacity; that in October, 1907, there was a congestion of freight in the yards of the railroads; that that condition was not peculiar to the Iron Mountain road, but existed on all the roads and in other states; that on account of the congested condition they utilized the power to all the advantage they could by adding to the local movement an added tonnage of probably 500 to 600 tons a day. The added tonnage came from trains from St. Louis, Kansas City, New Orleans, Alexandria and Memphis, going to local points in the local territory or division. Superintendent Cannon issued instructions to utilize the local power to the best advantage in the movement of business, and not to exceed on the local trains, which had light engines of 1,200 tons capacity, 1,000 tons on each local division. Those instructions were carried out to the letter, as I remember it. Ordinarily the local

train would handle only such local cars, less than carload, as originated on the local division. There was a large addition to the loading of local trains during the month of October, 1907, on account of the congested condition of the traffic. A great part of the additional loading came from trains from St. Louis, Memphis, New Orleans, and other points outside of the State of Arkansas. The local train would go in to the terminal with its full capacity of engine tonnage in nearly every case, both north and south; accumulated that tonnage from the White River Division at Newport and Memphis Division at Bald Knob. What they picked up at Newport came from Springfield, Mo., and Missouri Pacific territory. That from the Memphis Division would move from Memphis to Bald Knob on the Memphis territory. (R. 1777-8-9.)

The court found that the evidence was practically conclusive that from 500 to 800 tons gross of freight were added to each local train in order to relieve the congestion.

"When conditions are normal the evidence shows that practically the only through freight carried on local trains is that intended for or carried from points intermediate between division yards. The interstate business carried on local trains averages about 40 per cent of the entire freight carried, and the calculation should be made on that basis." (Opinion, p. 87.)

The correctness of the court's finding can not be questioned by appellants without doing violence to the evidence. Indeed the evidence would have better warranted the court in finding that the intrastate freight carried on local trains

when conditions are normal is 75 per cent and the interstate freight 25 per cent.

If the error as to the local and through freight carried on local trains is corrected, and the ratios of state and interstate freight carried on that class of trains made to conform to the evidence and findings of the court, that tonnage alone would reverse the result and show grossly inadequate earnings even under the method pursued by the State in dividing train and transportation cost.

Again, if the method pursued by the State in ascertaining the amount of interstate freight handled in the State of Arkansas in the month of October, 1907, by deducting the actual movement as ascertained from waybills and wheel reports from the revenue account kept by the auditor and reflected in exhibit 26 is erroneous, as we have heretofore endeavored to show, that error would utterly destroy and defeat the State's method of division.

THE BASIS USED BY THE STATE IN ASCERTAINING THE COST OF TRANSPORTING INTRASTATE AND INTERSTATE PASSENGER, AND MAIL AND EXPRESS BUSINESS.

The basis of division of passenger expenses is contained in exhibits M and T filed by the State. The division is between "coach and Pullman service, and intrastate, interstate, mail and express business. In general the expenses are divided on a car mile basis, the mileage used being that of October, 1907."

The division is made in detail, following the same divisions of expense as are contained in exhibit K relating to freight. The bases used are wholly different. Maintenance of way and structures, maintenance of locomotives, yard and train expenses, are apportioned between coach, Pullman, mail and express service on a car mile basis. Maintenance of passenger train cars is divided between coach, mail and express service on a car mile basis; traffic expenses between intrastate, interstate, mail and express business on the basis of the gross earnings; station expenses between intrastate and interstate business on the basis of the number of passengers of each class, making an allowance of "about 10 cents per day" for the handling of mails at certain stations and assuming that each intrastate passenger makes use of two terminals and an interstate passenger of one; loss and damage to baggage between intrastate and interstate according to the gross earnings of each; supervision and

general and general expense are divided on the basis of the direct charges as apportioned to each class. The cost of coach and Pullman service is divided between intrastate and interstate business in proportion to the total passenger miles of each class of traffic and added to the other cost of intra-state and interstate business. Miscellaneous revenue and dining car deficit are divided between intrastate and interstate business in proportion to the gross earnings; taxes, rentals, hire of equipment and value of property are divided between intrastate, interstate, mail and express in proportion to the total earnings of each class.

It will be observed that the State did not pursue the same method in dividing the expense of passenger service as it did in the division of freight expense. It abandoned the division as between local and through trains. The reason is given in an explanatory statement on the first sheet of the exhibit, where it is stated that it was not considered necessary to make a division as between local and through service, as nearly all passenger trains on the St. Louis, Iron Mountain & Southern Railway do a local business, meaning that through trains carry local passengers. The same condition existed with reference to the freight traffic, and the reason given presents no distinction in the two cases.

The St. Louis, Iron Mountain & Southern Railway operated 48 local trains and eight through trains in the latter half of 1907. The average stop of the local trains was every 5.2 miles; of the through trains every 36 miles in the State. The average run of the local trains was 114 miles; of the

through trains 275 miles in the State. The average length of the local passenger haul was 30 miles; of the through passenger haul 118 miles. (Exhibits 5 and 46.)

If the method of dividing freight expense was practicable it was equally so with regard to passenger expense, as there is approximately the same relation between the local passenger train and the through passenger train as there is between the local and through freight trains. The local passenger train is used for doing short haul business just as the local freight train is with regard to freight. The incidents of each class of service are similar in many respects. For instance, the through passenger trains like the through freight trains run day and night; the local passenger, like a local freight train, only in daytime. The length of train run is very much shorter in the local passenger service than in the through, and, as in the case of the division of freight expense, they have overlooked many of the elements of increased expense of local passenger business in dividing on the car mile and other bases used by them and, while claiming to have reached a result that reflects the actual cost of each class of traffic, they have in reality assigned to mail and express traffic items of expense that are not in any way connected with either class of business.

MAINTENANCE OF WAY AND STRUCTURES.

The same objection that has been urged to the division of maintenance of way and structures on the basis of locomotive mileage in exhibit K applies to the division on the basis of car miles in the passenger service. A very large proportion of that expense is not incident to and does not result from operation of either freight or passenger cars.

MAINTENANCE OF EQUIPMFNT.

Locomotive Expense:

The division of locomotive expense is made on the basis of the car miles of one month, without any allowance for the difference in the cars on different trains and the expense caused thereby, or for the additional strain put upon the engines by the more frequent stops and starts of the local train. A number of witnesses testified that the repairs to passenger locomotives should be proportioned to the work done by them, and unless all cars are exactly alike the division can not be made on a mileage basis. It is in evidence that an express car weighs 35 tons, coach 45 tons, chair car 50 tons, sleeper 60 to 70 tons, baggage car 35 tons. It would seem obvious that the cost of repairs to locomotives should be in proportion to the weight and mileage of the cars handled by them. This mode of dividing locomotive repairs assumes that the repairs of a locomotive hauling a train consisting of three cars are one-third those of a locomotive hauling a train of nine cars, which is manifestly incorrect, as shown by the testimony.

Passenger Train Cars:

Mr. Rosing testified that a mail car costs from 15 to 20 per cent more to repair than an express car, and a coach 100 per cent more; that the cost of cleaning cars on a mileage basis is not correct; coaches and chair cars are cleaned at passenger terminals whenever a train arrives, without regard to where it came from or what its mileage

may have been, and the amount of work is not measured by the mileage the car has made. There is also a great difference in the expense of cleaning express and mail cars, it costing from 10 to 12 per cent more to clean the latter than the former. The average cost of cleaning a coach is \$1.45. car 65 cents, express and baggage cars 55 cents. (R. 1733-4.)

Mr. Nay testified that the division on a car mile basis is not proper because the expense has little or no relation to the car miles. The car miles of local trains which carry no Pullman cars are treated in the exhibit the same as those in through trains which carry Pullmans, and the method of division is inaccurate because it does not assign a sufficient proportion of the expense of the traffic carried on local trains. (R. 1842.)

Mr. Ward testified that the local train is used for doing a short haul business, and there is a lot of expense attached to the handling of local passenger service which can not be measured by the car mile. The local train has in service for a given number of train miles a much larger number of cars, as local trains run practically in daylight only and tie up at night. (R. 1867.)

Traffic Expense:

This expense is divided on the basis of the gross earnings, and 19.33 per cent of the entire expense is charged to mail and express, viz: 11.63 to mail and 7.70 per cent to express. This item covers advertising and agencies main-

tained for the purpose of soliciting and building up business. None of that expense should be charged to those accounts. The mail is carried under contracts with the United States Government, and the railroad company has nothing to do in connection with the business conducted by the express companies. Their only function in connection with that class of business is to provide space in the cars and at stations for the business of the express company. There is no soliciting of either mail or express. The compensation that accrues to the railroads is by contract with the Government or the express company. Mr. Johnson testified that there is no official whose salary or expenses is charged to the traffic account who has anything to do with the making of these contracts. There is a cost incurred in the handling of the mail business, such as the manager of mail traffic and his office force, but it is charged to general expense in the accounts of the railroad company and also in exhibit M.

Mr. Wharton, on being asked why he charged mail and express with any part of traffic expense, stated that he did so because he had no other way to divide it; that it would have been necessary for him to have gone into the offices of the railroad company to see how mail and express were handled in the traffic department, that he could not answer the question without making such an examination, and that the division was made without investigation, and yet, when they come to divide the expense of loss and damage to baggage, miscellaneous revenue and dining car expenses between the various classes of traffic, on the same basis, they

experience no apparent difficulty in eliminating mail and express.

Train Auditors:

Under the heading, "5—General Expenses," items amounting to \$160,767.19 are divided between coach, Pullman, intrastate, interstate, mail and express on the basis of the direct charges to each class. \$44,872 of the amount represents expense of train auditors, \$14,893.46 of which is charged to mail and express. The expense of train auditors is incurred in connection with the handling of passengers upon the train. They perform no duties in connection with operation, their only service being in connection with passengers for the purpose of collecting tickets and cash fares; that item of expense should be divided between intrastate and interstate on the basis of the number of passengers handled. Divided on that basis \$38,074.03 would be chargeable to intrastate business and \$6,798.13 to interstate business. (Exhibit 56, subdivision "B," Expense of Train Auditors, etc.) See also evidence of F. P. Johnson, R. 2008-9.)

Station Expense:

This expense is divided without regard to trans-state passengers, who make no use of local terminals, and on the assumption that a state passenger is only twice as expensive as an interstate passenger; that one traveling 118 miles, the average haul of the interstate passenger, has only twice the use of station facilities as four state passengers, each travel-

ing 30 miles, the average state passenger haul on the Iron Mountain Road and on the St. Louis Southwestern Road 23 miles as compared to 121 miles. Trans-state passengers make no appreciable use of station facilities. Interstate passengers use but one terminal, and that once in 118 miles, while the intrastate passenger uses two terminals on an average journey of 30 miles. A passenger going five miles will use every portion of the depot facilities—baggage, trucks, platform and scales—that a passenger going 300 miles will. The greatest part of the station expense is in connection with the short haul.

Yard and Train Service:

This item of expense includes among others—

Yard service.....	\$ 15,124
Train and engine men.....	182,772
Fuel and train supplies.....	135,712
Care of passenger cars.....	50,600
Engine house expenses.....	46,499
Wrecks	17,879
Injuries to persons.....	56,128
Damage to stock.....	39,264

The same expense is charged to all passengers on different classes of cars on local and through trains. It includes wages of crews and engine men, assuming that the wages of a train crew which runs a train of nine cars is as much as the wages of a crew on a train with three cars, while the evidence shows that the wages of the crew are not based on the cars handled but on the train mileage, and the wages of the local crew are greater per train mile than the through train crew. The cost of fuel and supplies is different, as a larger expense is incurred for ice, water and

lighting coaches than for mail and express cars. The consumption of fuel is affected by the stopping and starting and weight of trains. No account is taken of the difference between local and through trains in that respect.

Injuries to persons could probably have been actually divided between local and through trains and between state and interstate passengers. The attempt to divide it on a car mileage basis including all kinds of cars is erroneous, and charges too much of this account to through service and not enough to local service. The division is erroneous as affecting yard service, because one local train of four cars often receives more attention at the terminals in the way of switching than a through train of nine cars. The car mile is not a proper unit for dividing the expense occasioned by wrecks. The testimony shows that by far the greater per cent of derailments, the principal cause of wrecks, is due to the tender, which is a part of the locomotive, and is not taken into account in this division.

Under the head of "Supervision and General," \$40,476.06 is divided between coach, Pullman, intrastate, interstate, mail and express business on the basis of the direct charges as apportioned in the preceding divisions. The correctness of this method of apportionment depends upon whether the direct charges upon which it is based are properly apportioned. If they are not, as we have endeavored to show, then the division of this item of expense would be affected to the extent that the different classes of expense are erroneously divided.

DIVISION OF COST OF COACH AND PULLMAN SERVICE BETWEEN INTRASTATE AND INTERSTATE BUSINESS.

This large item is divided between intrastate and interstate business in proportion to the total passenger miles of each class of traffic during the six months. The intrastate miles were 43,355,000, the interstate 30,486,624; 58.71 per cent of the total charge of \$896,378.78 is charged to intrastate and 41.29 per cent to interstate. Included in the above passenger mileage was the mileage of passengers carried in Pullman cars, representing \$302,126.66 of the total cost of passenger service. This account is again divided separately as "Cost of Pullman Service" between intrastate and interstate business on the basis of 25 per cent intrastate and 75 per cent interstate. The result of this method is to charge the expense of Pullman service twice, once in the division of coach expense, where the expense is divided ratably on the basis of passenger miles of coach and Pullman passengers in the proportions stated above, and again in the division of Pullman service, on the arbitrary basis of 25 per cent intrastate and 75 per cent interstate, resulting in a large increase in the expense of interstate business by reason of their having practically used the Pullman passenger mileage twice. Or, if it was proper to divide and apportion the cost of coach and Pullman service separately, it is not right that the Pullman passenger miles should be used as a factor in dividing the coach expense, because to do so would effect a very large reduction in the cost of intrastate passenger service. Upon

that point Mr. F. P. Johnson testified that if not more than 25 per cent of the Pullman passengers are state passengers, that fact would indicate that 75 per cent of them were of much longer haul than the state business, "or, to put it differently, the interstate passengers are of much longer haul than the state passengers, and the result would be that by reducing the total passenger miles to the extent of the Pullman passengers the change in these percentages (of coach cost) would be very substantial, because you would reduce the interstate passenger miles in larger proportion than you would the state passenger miles. The elimination of the Pullman passenger miles from the general division would increase the cost of handling state business in coaches about 8 per cent."

(See evidence of Ward, R. 1867 to 1870; Gray, R. 1911-1917; Nay, R. 1849-1851; Johnson, R. 1995-2000; Rosing, R. 1733-4, and others.)

It is apparent that the State has wholly ignored the difference in conditions pointed out in the evidence we have reviewed in connection with the division of the cost of passenger service. Many of the differences are obvious and can not be disregarded, and to the extent that they have been ignored the conclusions are misleading.

The result of the division of expense of the passenger service on the various bases used in exhibit M is shown in net earnings on exhibit O, and is as follows: Intrastate earnings, 5.21 per cent; interstate loss, 3.44 per cent; mail,

.04 per cent earnings; express, 9.61 per cent loss. The result would seem remarkable in view of the evidence. It would be difficult to account for the fact that there should be a profit of 5.21 per cent on intrastate passenger business and a loss on interstate business, in view of the well-established fact that the rates are practically the same and that it costs more to transport an intrastate passenger than an interstate passenger per mile. A more remarkable result, however, is the loss on express and the small gain on mail business. It is a well known fact that the express business involves a minimum of expense to the railroad company. It has nothing to do with reference to express business but to assign space in the cars and in the station; the express company does all the rest. It renders no service in connection with the mail except to deliver it from the train to the post-office, where it is within 80 rods of the station. Mr. Gray's attention was called to the deficit in express earnings at the conclusion of his testimony in chief. In commenting on it he said:

"If there is any department of the railroad's income that represents the least expense to the dollar received it is the express business. The railroad determines the amount of space to be allotted to express; space at a station is allotted only when it can be spared. No railroad employee is required to handle a pound of express; yet the result of the State's basis indicates that it costs \$172,475.77 to earn \$133,910.82 in express service." (R. 1916-17.)

Truly a most remarkable showing!

We have had the State's figures revised by dividing all of the traffic expenses and the expenses of Train Auditors

between intrastate and interstate traffic and dividing the cost of coach and Pullman service between intrastate and interstate traffic, separately, thereby avoiding the duplication of the Pullman passenger miles, also correcting errors in the mileage of each class of cars as reported in the State's exhibit, and conceded; with these changes, the result of the State's formula would be to show the returns upon the value of the property of the St. Louis, Iron Mountain and Southern Railway Company from each class of traffic, as follows:

Intrastate Passenger—A return of 1.39 per cent.

Interstate Passenger—A deficit of 1.34 per cent.

Mail Traffic—A return of 3.45 per cent.

Express—A return of 0.56 per cent.

On the St. Louis Southwestern Railway Company, the return upon each class of traffic would be as follows:

Intrastate Passenger—A return of 3.85 per cent.

Interstate Passenger—A return of 1.10 per cent.

Mail Traffic—A deficit of 9.03 per cent.

Express—A return of 3.81 per cent.

This does not include any other changes than the four mentioned above, nor does it make any provision for increase expense of intrastate traffic or for any increase in the cost of passenger traffic as compared with mail and express traffic not provided for by the State's basis.

Right here, it is well to call attention to the fact that the return upon the value of the property employed in the entire passenger service (including intrastate and interstate

passengers, mail and express) is .67 per cent on the St. Louis, Iron Mountain & Southern Railway and 2.01 per cent on the St. Louis Southwestern Railway. This is the result of the figures submitted by both sides and there is, consequently, no dispute as to the correctness of those returns.

It would seem incredible to assume such a difference in the cost of handling any one of the classes of service as to overcome the fact that the entire passenger traffic is non-compensatory and confiscatory, as shown by the result of the figures compiled by both sides. This is especially true from the fact that the average revenue per passenger per mile in both intrastate and interstate traffic is practically the same, by reason of the fact that the railroads are compelled to reduce the through rate to a parity with the local rates in all cases.

The difference in cost being in favor of the interstate traffic, by reason of the much longer haul and the fact that intrastate passengers incur two terminal handlings in the State as compared with one for the interstate, and none for the trans-state part, would also tend to show that the intra-state traffic will not yield any greater return than the total business as shown above.

EXTRA EXPENSE OF PASSENGER TRAFFIC.

No allowance was made in exhibit M for the increased cost of transporting intrastate over interstate passengers. That there is a very material difference is abundantly established by the evidence. The causes contributing to the difference in expense are very clearly stated by Mr. McPherson. (See his testimony, R. 327-331.)

A number of operating men were examined as to the difference in expense of transporting the two classes of passengers, and gave their views as to the elements of difference and as to the per cent of extra cost. Mr. McPherson estimated it at 35 per cent increase; Mr. Doddridge from 20 per cent to 30 per cent; Mr. Sewall at 50 per cent; Mr. Ward at 40 per cent; Mr. Whittenton at 25 per cent.

The court divided the expense of the passenger service on the revenue basis, charging the intrastate passenger service on the St. Louis, Iron Mountain & Southern Railway with 10 per cent greater net cost than through, but made no allowance on the St. Louis Southwestern for extra cost, on the ground that the difference in fares between local and through passengers is greater than on the Iron Mountain Railway, and that the difference in cost between the two classes of passenger service was no greater than the higher fares that had been collected. (See opinion, 92, 94.)

THE EFFECT OF THE COURT'S FINDINGS OF FACT.

The court adopted the method presented by the appellants for apportioning the expense of operation and transportation between intrastate and interstate freight.

Their method consisted of a great number of details requiring minute investigation and analysis of all the various elements of expense incident to the operation of through and local trains, and the transportation of state and interstate freight. The court followed their formulas in many of the details, and only departed from them when they were unsupported by evidence, or, if there was conflicting evidence, where it found that the weight of the evidence supported a different conclusion. In such cases it made such changes in the formulas as to make them conform to the evidence. After the court had determined what the basis of apportionment of expense should be, it referred it to the accountants of each side to figure out the result. This was done by T. A. Hamilton, the expert accountant for the State, and F. P. Johnson for the railroad companies. They agreed in the result and certified it to the court, and the court adopted it as the final result of the formulas adopted by it. (See exhibit A at the end of the opinion, page 106.)

Where the lower court has considered conflicting evidence and made its finding and decree thereon, all presumptions are in favor of the correctness of the finding, and it will not be disturbed unless clearly in conflict with the weight of the evidence.

Kimberley v. Arms, 129 U. S. 512, 525.

Snyder v. Dobson, 74 Fed. 757-8.

McKinley v. Williams, *Ib.* 94, 102.

Idaho Mining & Mill Company v. Davis, 123 Fed.
255.

RETURN ON THE INVESTMENT.

Only the actual value of the property as agreed by the parties to the proceeding and free from any question of capitalization or bonded indebtedness or interest charges was considered. The court determined that six per cent upon the value of the property devoted to intrastate traffic would be just compensation, with an additional allowance of one and one-half per cent for a surplus fund to cover depreciation charges and provide against contingencies.

The views of the court on this question are stated at pages 96 to 105 of the opinion, and we do not feel that we can add anything to what is there said in support of its conclusions. The earnings as found by the court fall so far below any rate of compensation that would be considered reasonable that the question is not of any great practical importance at this time.

Respectfully submitted,

MARTIN L. CLARDY,

SAMUEL H. WEST.

JOHN M. MOORE,

Solicitors for Appellees.

APPENDIX.

RESULTS obtained under the various bases submitted at the hearing, covering the period from July 1 to December 31, 1907.

Basis submitted by the railroad companies, using the estimate of extra cost for intrastate traffic—freight, 50 per cent; passenger, 15 per cent. See exhibits 3 and 3-A and 33 and 34.

	<i>St. L., I. M. & S. Ry.</i>	<i>St. L. S. W. Ry.</i>
Gross revenue from intrastate freight and passenger traffic	\$1,476,790.37	\$ 419,165.78
Operating expenses, taxes and rentals	1,500,713.75	371,103.77
Net earnings.....Def.	23,923.38	48,062.01
One-half the estimated value of the property.....	4,424,048.46	1,285,157.97
Estimated returns based on the per cent of net earn- ings to valuation.. Def.	0.54%	3.74%

Freight, 100 per cent; passenger, 15 per cent.		
Gross revenue from intrastate freight and passenger traffic	\$1,476,790.37	\$ 419,165.78
Operating expenses, taxes and rentals	1,654,256.99	406,077.89
Net earnings.....Def.	177,466.62	13,087.89
One-half the estimated value of the property.....	4,424,048.46	1,285,157.97
Estimated returns based on the per cent of net earn- ings to valuation.. Def.	4.01%	1.02%

The lowest estimate of the extra cost of handling intra-state freight testified to by any of the railroad operating men was three to one.

.....

Basis submitted by the State. See exhibits N and O and U and V.

<i>St. L., I. M. & S. Ry. St. L. S. W. Ry.</i>		
Gross revenue from intrastate freight, passenger and miscellaneous traffic....	\$ 1,515,430.65	\$ 426,698.38
Operating expenses, taxes and rentals	1,166,330.13	306,801.14
Net earnings.....	\$ 349,100.52	\$ 119,897.24
One-half the estimated value of the property.....	4,539,045.82	1,308,426.55
Estimated returns based on the per cent of net earn- ings to valuation.....	7.69%	9.16%

.....

Basis adopted by the Court in the decision rendered.
(See opinion, Judge Trieber.)

<i>St. L., I. M. & S. Ry. St. L. S. W. Ry.</i>		
Gross revenue from intrastate freight, passenger and miscellaneous traffic....	\$ 1,726,578.86	\$ 466,476.19
Operating expenses, taxes and rentals	1,688,558.83	429,221.07
Net earnings.....	\$ 38,020.03	\$ 37,255.12
One-half the estimated value of the property.....	5,158,266.75	1,430,321.18
Estimated returns based on the per cent of net earn- ings to valuation.....	0.74%	2.60%

Office Supreme Court, U. S.
FILED.

APR 1 1912

JAMES H. MCKENNEY,
Clerk.

The Arkansas Rate Cases

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS, APPELLANTS,

v. No. 441.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN
RAILWAY COMPANY, APPELLEE.

AND

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS, APPELLANTS,

v. No. 440.

ST. LOUIS SOUTHWESTERN RAILWAY
COMPANY, APPELLEE.

IN THE SUPREME COURT OF THE UNITED
STATES.

SUPPLEMENTAL BRIEF IN BEHALF OF
APPELLEE.

MARTIN L. CLARDY,

SAMUEL H. WEST,

JOHN M. MOORE,

Solicitors for Appellees.



IN THE
Supreme Court of the United States

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS, APPELLANTS,
V. No. 814.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN
RAILWAY COMPANY, APPELLEE.

AND

ROBERT P. ALLEN ET AL., RAILROAD
COMMISSIONERS, APPELLANTS,
V. No. 813.

ST. LOUIS SOUTHWESTERN RAILWAY
COMPANY, APPELLEE.

SUPPLEMENTAL BRIEF IN BEHALF OF
APPELLEE.

DIVISION OF COMMON EXPENSE BETWEEN
FREIGHT AND PASSENGER TRAFFIC.

Statement 5 to exhibit 3 (R. 2310) contains the bases used in dividing operating expenses between states and common expense, incapable of allocation, between freight and passenger service. Wherever the expense was of such a

nature that it could be allocated to the one or the other it was done. Mr. Johnson testified that this method of keeping the accounts had been in use a great while on the Iron Mountain railroad, and it was a common method in use on most roads. The following classes of common expenses are divided between freight and passenger in the statement referred to on the basis of the number of train miles in each class of service, viz: Maintenance of Way and Structures; Repairs of Locomotives; Other items under Maintenance of Equipment not including Repairs, Renewals, Depreciation of freight and passenger cars and Cars Borrowed and Loaned; Roundhouse Expense; Water and other supplies for Locomotives, not including Fuel; Miscellaneous Employees of Transportation Department, such as Crossing Watchmen, Signalmen and Superintendence; Common items under General Expenses.

Paragraph B of exhibit 3 (R. 2293) contains the result of the division of expense made by the railroad company as between freight and passenger service, using the train mile as a factor for dividing the classes of common expense above enumerated. \$3,253,034.86 is charged to freight service, and \$1,678,189.89 to passenger service.

Counsel comment at some length in their brief on the use of the train mileage as a factor in dividing common expense. They single out the item of maintenance of way and attempt to show that dividing that particular item on the train mileage results in a large increase in the expense

of passenger service, although it would seem to be obviously fair that whatever basis of division is adopted should be applied to all of the common expense; and certainly there can be no merit, from an accounting standpoint, in dividing Maintenance of Way and Structures on the revenue basis and such items as General Expenses on the train mile basis. They have inserted a table on page 255 of the State's brief showing the effect of the apportionment of maintenance of way expense on the train mile basis as compared with the division of that class of expense on the revenue basis. This table is misleading as an illustration. The common expense, that is that portion of the expense of conducting freight and passenger service that can not be allocated to the two branches of service, consists of many other items than those embraced in maintenance of way, as we have shown.

Paragraph B of exhibit 3 (R. 2293) shows the division of expense made by the railroad company as between freight and passenger service, using the train mile as a factor for dividing the common expense, with the result as stated above.

The following table shows that if all of the common expense were treated uniformly and divided on the revenue basis, it would very materially increase the expense chargeable to the freight service, and would have resulted in a large deficit in the earnings accruing from that class of business.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN RAILWAY COMPANY.

ARKANSAS RATE MATTER.

If the common expenses that have been divided between freight and passenger on the train mileage basis had been divided on the basis of gross earnings, the results as shown in the St. Louis, Iron Mountain & Southern Railway Company's Exhibit No. 3 would have been as follows:

	Freight.	Passenger.	Total.
Maintenance of Way and Structures	\$ 773,605.22	\$ 281,071.29	\$1,054,676.51
Maintenance of Equipment.....	824,835.60	210,730.47	1,035,566.07
Traffic Expenses	88,734.42	53,276.08	142,010.50
Transportation Expenses	1,663,207.01	563,437.86	2,226,644.87
General Expenses	182,364.40	110,621.03	292,985.43
Hire of Equipment, Balance	175,400.21	2,757.26	178,157.47
Dining Car Service, Balance.....	.....	1,183.90	1,183.90
	<hr/> \$3,708,146.86	<hr/> \$1,223,077.89	<hr/> \$4,931,224.75
Taxes	162,945.69	59,202.49	222,148.18
Rentals	16,084.56	5,843.95	21,928.51
Grand Total.....	<hr/> \$3,887,177.11	<hr/> \$1,288,124.33	<hr/> \$5,175,301.44

<i>Recapitulation.</i>	<i>Freight.</i>	<i>Passenger.</i>	<i>Total.</i>
Gross Revenues	\$4,896,272.91	\$1,778,803.88	\$6,675,976.79
Operating Expenses	3,708,146.86	1,223,077.89	4,931,224.75
Net Operating Revenue.....	\$1,188,126.05	\$ 555,725.99	\$1,743,852.04
Less Taxes and Rentals.....	179,030.25	65,046.44	244,076.69
Balance	\$1,009,095.80	\$ 490,679.55	\$1,499,775.35
Assessed Value of Property (Ex. 3-A)	\$14,665,072.35	\$5,328,209.65	\$19,993,282.00
Percentage of Net Earnings to Valuation.....	6.88%	9.21%	7.50%
Leaving.....	\$ 640,248.17	\$ 836,542.20	\$1,476,790.37
Expenses, including Taxes and Rentals.....	\$ 508,442.77	\$ 605,804.87	\$1,114,247.64
Leaving.....	\$ 131,805.40	\$ 230,737.33	\$ 362,542.73

The Intradistate gross freight and passenger revenue, as shown in statement 1 of exhibit 3 is as follows:

The intrastate proportion of the total operating expenses, taxes and rentals divided on percents based on the gross earnings of each class, as shown in Exhibit 3 (Freight 13.08%, Passenger 47.03%), is as follows:

The extra cost of handling intrastate freight, as shown under various percentages in statements Nos. 6 and 7 of Exhibit 3, is as follows:

	Freight.	Passenger.
Net earnings after dividing operating expenses, taxes and rentals on the straight revenue basis	<u>\$131,805.40</u>	<u>\$230,737.33</u>
Extra cost at 50%	<u>197,644.23</u>	Extra cost 15%
Deficit	65,838.83	Surplus
Extra cost at 100%	372,668.76	Extra cost 25%
Deficit	240,863.36	Surplus
Extra cost at 150%	528,781.74	Extra cost 35%
Deficit	396,976.34	Surplus
Extra cost at 200%	668,208.06	Extra cost 50%
Deficit	536,402.66	Surplus

Assessed value of the property employed in Intrastate

Traffic as shown by Exhibit 3-A.....\$1,918,191.46

Percentage of Net Earnings to valuation, at 50% extra cost of freight. 15% extra cost of passenger.

Assessed value of the property employed in Intrastate Traffic as shown by Exhibit 3-A.....\$1,918,191.46

.....

Percentage of Net Earnings to valuation, at 50% extra cost of freight. 15% extra cost of passenger.

Percentage of Net Earnings to valuation, at 100% extra cost of freight

25% extra cost of passenger.

If the basis outlined by Judge Trieber is applied to the figures as adjusted by dividing the common expenses between freight and passenger on the revenue basis, the result would be as follows:

Earnings from Intrastate Traffic.....	Freight \$ 656,717.58
	Passenger 1,069,861.28
	Total \$1,726,578.86

Freight Operating Expenses divided on basis of 210% additional cost calculated on ton mile bases and taxes, rentals and hire of equipment on the revenue basis	\$736,414.72
Passenger Operating Expenses divided on basis of 10% additional cost calculated on the revenue basis and taxes and rentals on the straight revenue basis	794,713.09
Net earnings,.....	1,531,127.81
Assessed value of the property	\$ 195,451.05
Per cent of Net Earnings to valuation	5,158,266.56
	3.79%

No good reason can be possibly shown why any particular class of expense, such as maintenance of way, should be selected and treated differently from other classes of common expense in the matter of apportionment as between freight and passenger service, and a comparison of the results in the foregoing table with paragraphs B, D and E of Exhibit 3, demonstrates that the use of the revenue as a factor of division would have made no material difference in the results shown in the exhibits filed by the railroads. The reason for using the train miles is clearly shown by the evidence of the operating men, many of whom testified that while it was not by any means perfect it was the best factor that could be used for that purpose.

This objection was not raised during the taking of the testimony. Mr. Ludlam, a member of the firm of Haskins & Sells, public accountants, who prepared the accounts on the part of the State, testified on this point as follows:

"My firm has prepared a statement in this case that we think reflects pretty closely the two classes of business in the State of Arkansas."

Q. I believe you began this division by first taking the division between freight and passenger?

A. *We accepted the company's figures on the freight and passenger.* We have not gone back of the statements submitted by them in this case.

Q. Upon what basis did they divide that?

A. I understand they divided upon the revenue train mileage basis. (R. 1320-1.)

Mr. Wharton, who was in direct charge of the work of Haskins & Sells in connection with these cases, was asked:

Q. Statement No. 2 to Exhibit 5 filed by the plaintiffs in this case contains a statement of the basis upon which the division is made between freight and passenger traffic expenses. Is that the basis upon which you acted in dividing expense as between freight and passenger traffic?

A. We made no division between freight and passenger of our own, simply taking the division made by the railroad company itself.

Q. You simply adopted the division they had made?

A. We took their division.

Q. Why did you take that, Mr. Wharton?

A. We considered it was good enough for the purpose we cared to use it for.

Q. Both as to state assignment and as to division between freight and passenger?

A. Yes, sir.

After stating that the division was made largely on the train mile basis he was asked:

Q. Did you think that was a proper basis to divide it upon?

A. *As between freight and passenger it was probably good enough for the purpose of this case.* I would not care to pass a personal opinion on that, because I haven't studied it sufficiently to form an opinion as between freight and passenger. Having accepted the railroad company's division between the freight and passenger, the only study that was necessary was as to division of freight expense between local and through and the passenger expense of the various classes. (R. 1030-2.)

Mr. Hamilton, another representative of Haskins & Sells, who had a great deal to do with the statistics that were compiled by the State, testified:

"The expenses shown in statement 4 of Exhibit 3 for the Iron Mountain and State of Arkansas were verified by us to this extent, we had recourse to the company's expense distribution books, on which the department, at that time under Mr. Johnson's charge, distributed the various vouchers and expense reports, the superintendent's expense reports throughout the various accounts. In dividing these expenses between freight and passenger, or rather in checking and taking off the company's division of them from that record, we necessarily verified the total as set forth by Mr. Johnson; we didn't go back of his record; that is, we didn't go to the individual vouchers or to the superintendent's reports, except in a few minor instances, and I saw no objection to that as a basis, for the reason that it is made the basis of all the company's statistics."

Q. And you regard it as a correct and proper basis?

A. Yes, sir; we applied some broad tests to it also, to see whether this period averaged up with charges of like character on other periods; on track maintenance, for instance, we took the average cost per mile for several years back, and saw that they averaged up, and that this was fairly normal.

Q. You found, though, no objection to that as a proper basis, or as to the manner in which it had been worked up, as far as your verification went?

A. We have no doubt as to the accuracy of these figures; I don't think there is anything wrong with them.

Q. What was your view as to the revenue train mile as a basis for dividing common expenses between freight and passenger traffic?

A. My opinion on that subject, of course, must be based on just what thought I have been able to give it, and what I have heard people say; I have nothing to do with the operation of trains in an executive capacity. If you want that, I would be glad to give it to you.

Q. Yes; I would like to have that.

A. I should think it was a very fair basis, basing my opinion on what I have just stated, that the extra weight of the freight train would be offset by the extra speed of the passenger train, and that might make it a fair division.

Q. If that was a proper division between freight and passenger, why did you depart from it in dividing the expense of operating local and through trains?

A. It seems to me that where you are considering the freight train as one unit, and the passenger train as another unit, usual divisions between the two classes of service, and you have lumped all your freight trains, that that might be some justification in itself for the first division; that is, you have light local freights and heavy through trains, and they might average up with passenger trains, but when you come to the division between two freight trains, you have a common unit there, both hauling freight cars, and the number of car miles would be the better division.

Q. In making your divisions on the car mile basis, did you take into consideration the weight of the contents of the cars?

A. No, sir; a car mile was a car mile with us.

Q. You have treated an empty car in the same manner you did a loaded car?

A. Yes, sir. (R. 1525-6.)

Mr. Henry Wilmering, a witness for the State, who prepared a formula dividing expenses, testified:

Q. In looking over the paper you handed me in response to my request, where you prepared a formula showing your method of dividing operating expenses between state and interstate, I notice the first item is "Maintenance of Way."

A. That is the first general account; yes, sir.

Q. That you divided on the basis of car miles, straight?

A. Yes, sir; as between local and through trains?

Q. How are they divided between passenger and freight?

A. On the basis of the revenue train miles, it should be, except account No. 17, Docks and Wharves, which would be assigned to freight.

He further stated that the car mile ought to be accepted as the basis of division as between local and through trains, and was asked:

Q. If this is true, why should it not also be used as a basis of division between passenger and freight trains?

A. Well, we have made a concession to the railroad companies in that respect, and have accepted the theory advanced by the railroad officials themselves. One of the principal reasons why we have accepted the revenue train mileage basis for division between freight and passenger where the expenses can not be located is just a concession to the majority of the accounting officials. It is accepting the railroad's own theory.

Q. Who made that concession? You say "we." whom do you mean by "we?"

A. I mean we who represent the States in this litigation, especially in Oklahoma. (R. 1138-39.)

Mr. Hillman, who was introduced as an expert accountant, and who had no connection with the case otherwise than as an expert witness, gave it as his view that the expense of maintenance of way and structures should be divided on the basis of train weights instead of train mileage, both between passenger and freight service and local and through trains; and in that connection the State's accountants admitted that they disregarded the weight and put an empty car on the same basis as a loaded car, in preparing their formulas. (R. 1509-10.) He further testified that if he could not get the data upon which to make the division on the basis of weights, he would adopt the train mile as the next best method of division. (R. 1521.)

The above is practically all the testimony on the part of the State on this subject. It is plain that it does not develop any objection to the basis of dividing common expense on the train mileage adopted by the railroads in their exhibits.

The State's exhibit K used the car mile for the purpose of dividing the expense of maintenance of way between local and through trains. Mr. M. L. Byers, the chief engineer of maintenance of way of the Missouri Pacific System, and other operating men criticized and condemned its use, and counsel in cross examining them on that point endeavored to show that the objections urged by them against the car mile as a unit for dividing maintenance of way expense between

through and local trains would apply to the train mile as a factor for dividing between freight and passenger service.

Mr. Byers was asked on cross examination if all the reasons he had given in his testimony in chief against the car mile as a factor in dividing the expense of maintenance of way as between local and through trains would not be equally applicable to the train mile as a factor of dividing maintenance of way expense between freight and passenger service. He said it would not.

"I think the train mile as a general condition in making a division between freight and passenger of the maintenance of way expense is somewhat less in error than the use of the car mile statistics would be for the same purpose." (R. 1706.)

Mr. Nay was asked what factor the railroads used to divide maintenance of way expense between passenger and freight. He stated in answer:

"We have been using (I am speaking now of the formula we used for operating statistics which we furnished the Interstate Commerce Commission) we have been using the passenger and freight train mileage."

Q. You think that a fair approximation of maintenance of way expense as between freight and passenger?

A. It was as fair as we have been able to find at the time we compiled these operating figures. Our operating

men say that the greater speed of the passenger trains offsets the greater weight of the freight trains. So that it is fair to assume the passenger train mile may be considered the same as the freight train mile.

Q. Would a division of maintenance of way expense between freight and passenger on a train mileage basis be fairly accurate?

A. From the testimony I have heard from operating men I think it would be as accurate as anything that was available at the time these statements were compiled.

Q. Did you make your statement to the Interstate Commerce Commission in these various exhibits based on that formula?

A. Yes, sir. (R. 2034-35.)

Mr. F. P. Johnson testified that the railroad company kept regular statistics separating freight and passenger service and expense for the benefit of the operating department; that the division between freight and passenger on common accounts is made on the train mileage basis in those statistics. (R. 149-50.)

Mr. Carl Gray testified that he thought the use of the train mile in making the division between passenger and freight was fair on account of the fact that while one (freight service) subjects the right of way to much greater use, it does not require as high a degree of maintenance, and they come more nearly compensating. He was asked if that applied to the single track where both classes of traf-

fic are using it constantly, and stated that it did, because it means that while perhaps one uses it harder on account of the greater number of vehicles and the greater axle load, the other requires a higher degree of refinement. He was then asked if the train mile would be a satisfactory basis for dividing between State and interstate business, which is manifestly a wholly different proposition, and stated that it would not, because "in the one case the trains are entities and are representative of themselves, and in the other case not even the carriages themselves are representative." He further stated that for dividing maintenance of way expense as between passenger and freight the train mile presented the least objection, and was about the only method where the relation between the two branches of service had anything in common and was the only basis where the two departments came nearest to each other. (R. 1939-40.)

Mr. McPherson testified:

"The train mile measure being divided between freight and passenger service, may be followed in dividing the common expense as between freight and passenger traffic. But it must be discarded in any consideration and division between intrastate and interstate traffic for various reasons, among which are that it represents trains carrying both classes of traffic, also empty cars the ultimate assignment of which can not be determined and which in themselves yield no revenue." (R. 305.)

The train mile unit is used by most railroads in dividing common expense between freight and passenger for operating statements used in railroad operations; it was the basis authorized by the Interstate Commerce Commission and used by all railroads in compiling information called for by the Interstate Commerce Commission in the form of annual reports until recently. Common expenses such as maintenance of way and structures, repairs of locomotives, and other common joint service should not be divided between freight and passenger service on the revenue basis, as the revenue earned by the trains of each class of service has no bearing on the proportion of common expense chargeable to each train. Railroads are maintained in a higher state of efficiency for the benefit of the passenger traffic than they would be if they were exclusive freight roads. Many passenger trains are not run at a profit to the railroad companies, but under regulations of State commissions calling for a certain number of trains in certain localities daily. Many of these trains are operated at a heavy loss, some of them not even paying the cost of wages of the crew and supplies used by the train, and if the common expense incurred in the operation of a railroad, such as maintenance of way and structures, general expenses and other like items, were divided between the freight and passenger service in proportion to the gross earnings, when the earnings from passenger traffic are the result of operating such trains as those mentioned above, the result would not represent the actual cost or even a reasonable approximation, as it makes but little difference in the cost of oper-

ating a train whether that train is carrying ten or fifty passengers. On the other hand, being compelled to operate the train, frequently by State regulation, the only reasonable method by which to arrive at the cost of handling the passengers in the train, they being both State and interstate, is to use the revenue received from each.

In this connection the learned counsel refer to a statement contained in the opinion of Judge Trieber, that any attempt to apportion maintenance of way expense on a ton, car or train mileage would be an injustice to the railroads, and that the court was of the opinion that the straight revenue basis would get more accurate results.

Judge Trieber was not referring to the division of expense between freight and passenger service, but was discussing the division made by the State in exhibit K as between local and through trains. The State had made the division on the basis of car and engine mileage, and what the court intended to say was that neither the car nor the train mile was a proper unit of division between the local and through trains, both of which carry State and interstate traffic. The question as to the proper method of division as between passenger and freight traffic was not before the court, because, as we have heretofore shown, the question was not raised or insisted upon by counsel at the hearing before the lower court.

RELATION OF REVENUE AND RATES.

They say that the railroad company statistics show that freight intrastate revenue is 98.18 per cent higher than interstate, and passenger 3.48 per cent higher; but that Judge Trieber, taking into account all the various elements of extra cost of intrastate freight, concluded that for the reasons given by him 50 per cent was the proper allowance to be made for the difference in intrastate freight revenues or rates. These figures were developed in two exhibits filed by Mr. Kimbell at the request of the State (Exhibits G and A). We have dealt with that subject and called attention to the testimony of Mr. Kimbell and Mr. Johnson to the effect that the revenue, while to a certain extent affected by the rates, does not reflect changes in rates alone, but is the result of many conditions, including among them the rates, the character of commodities handled, the length of haul, and various elements of that character. Appellee's brief, pp. 108-111.

This matter was fully explained by Mr. Kimbell in his testimony (R. 2078) and by Mr. Johnson (R. 2000-1 and 2011-12), and the fallacy of the State's position is demonstrated by exhibits 54 and 58 filed by those witnesses. (R. 2447-2476.)

The attention of Mr. J. D. Watson, the general freight agent of the St. Louis Southwestern Railway, one of the most efficient railroad officials in his line of work—

that is, rate making—in the country, was called to this exhibit. He was asked:

"One of the exhibits introduced in this case (filed, I think, by Mr. Kimbell) indicates an increase as between the last one-half of the year 1907 and January, 1909, of 96 per cent in the revenue per ton per mile. I wish you would state if, in your judgment, there was that increase in the revenues as compared with the business done in those two periods?"

"A. I don't believe it could possibly be. I might explain why I think that. The revenue per ton per mile does not necessarily indicate anything as to the rate one way or the other. The higher class of traffic that you handle the more your revenue per ton per mile would be, but if you can increase your tonnage and reduce the character of it—that is make it a lower character, your revenue per ton per mile would necessarily decrease, while the volume that you would handle at the decreased revenue per ton per mile would still increase your revenue very materially."

"Now, I don't believe it would be possible, on the Cotton Belt, for a difference of 96 per cent in the revenue to occur between any two months or between one month and the average for any period, because I don't believe it changes or shifts that much." (R. 1676.)

The fact that the statistics of the railroad company show that the intrastate freight revenue is 98 per cent greater than the interstate freight revenue does not mean

that the rates charged on State traffic are twice as high per ton per mile as on interstate traffic. The statistics of the St. Louis, Iron Mountain & Southern Railway show that the average revenue per ton per mile of the total interstate traffic is 6.901 mills and of insetstate traffic 12.826 mills. But when the trans-state traffic is shown separately the result is as follows:

Trans-state	average haul	285 miles
	average revenue	5.799 mills
Interstate	average haul	168 miles
	average revenue	8.286 mills
Intrastate	average haul	72 miles
	average revenue	12.826 mills

In this case the State revenue is but 50 per cent greater than the interstate revenue, and that does not mean that the rate is 50 per cent greater, but rather that the average haul of interstate freight is more than twice as much as the average haul of State freight, and consequently the average revenue per ton mile is much lighter. If it were possible to separate the interstate traffic into blocks so as to gather together all of the freight the length of haul of which would approximate 72 miles, it is quite likely that the average revenue on that class of business would be as great or greater than the average revenue from State traffic. This is especially true of the results shown by the passenger statistics, wherein the average revenue per passenger per mile of intrastate passenger traffic is 3.48 per cent greater than the average revenue per passenger per mile from interstate passenger traffic. These rates, both

State and interstate, are made upon practically the same unit (two cents or three cents per mile), the lower revenue received from the interstate traffic being due entirely to the greater distance over which the passenger travels. A passenger moving thirty miles between the State of Missouri and Arkansas would pay practically the same rate as a passenger moving thirty miles wholly within the State of Arkansas, and the average revenue per passenger per mile upon each of these passengers would be exactly the same.

FORT SMITH TERMINAL EXPENSE.

In discussing the propriety of charging the expense of Memphis and Fort Smith terminals to the State of Arkansas the counsel say at page 287 of their brief:

"Judge Trieber held it was proper to charge Memphis expense to Arkansas, but says:

"This also applies to Fort Smith terminals in so far as Arkansas business is concerned, Oklahoma business being charged to that State with its proportion of expense.' "

This statement is based on a misunderstanding of Judge Trieber's ruling. Mr. F. P. Johnson had testified that the expense of the Fort Smith terminals "was charged to the State of Arkansas. The train service that passes through Fort Smith and Van Buren is divided on a mileage basis, but the station and yard service is charged to the State of Arkansas at Fort Smith." (R. 858.)

Q. What disposition did you make of the Fort Smith terminals in the Oklahoma Rate Case?

A. We did not make any disposition of that in the Oklahoma case. They are not included there at all.

Q. What did you do with this expense growing out of the trackage between Van Buren and Fort Smith in the Oklahoma case?

A. Any expense that is incurred on the line that enters into the State of Oklahoma is charged to the State of Oklahoma, but the terminal expense at Fort Smith—this station and yard service—is all charged to the State of Arkansas. (R. 1611-12.)

What the court stated in full is as follows:

"Objections are also made to the expenses of the Memphis and Fort Smith terminals charged entirely to the Arkansas business, although all of the Memphis business being in the State of Tennessee is interstate, and a very considerable part of the Fort Smith traffic is of that nature and all the earnings are credited to interstate business. The uncontradicted evidence shows that the Memphis terminal, which is the terminal point of that branch of the Iron Mountain, is used exclusively for the Arkansas business and differs in no respect from what would be incurred if it were in this State on the west side of the Mississippi River instead of being in Memphis on the east side of that river. This also applies to the Fort Smith terminals in so far as the Arkansas business is concerned, the Okla-

homa business being charged to that State with its proportion of expense. These matters will be considered and allowance made therefor when considering the apportionment of the expenses between the State and interstate businesss, and thus the injustice to the intrastate business rectified." (Opinion, p. 40-1.)

The court evidently intended to charge the station and yard expense at Memphis and Van Buren to the State of Arkansas, the former on the ground that the yards in Memphis are for all practical purposes the same as if situated in the State of Arkansas, and those at Fort Smith are in fact situated in that State; hence it was proper that the expense should be charged to that State; but that the train service at Van Buren should be divided on a mileage basis between Arkansas and Oklahoma, as was done. The reason for treating these station and yard expenses as was done by the court is fully explained in the evidence cited in our former brief at pages 78-82.

EXHIBIT 26.

Appellees contend in their brief that the statistics contained in this exhibit showing the proportions of intrastate freight carried on local and through trains in the month of October, 1907, should be used as the basis of dividing expenses between the two classes of freight without regard to whether they were correct or incorrect. They say at page 297 that the plaintiffs are morally and equitably estopped to question the force of the test month's statistics. They attempt to prove by one of appellee's witnesses, Mr.

Carl Gray, that the plaintiffs should be held to the statistics contained in that exhibit because it was filed by the plaintiff, and two of the plaintiff's witnesses, viz.: Mr. Doddridge and Mr. Kimbell, testified that for some purposes October was a fairly representative month. The circumstances under which the exhibit was filed have been explained, and it is not necessary to dwell upon that further than to say that it was filed after a request had been made for a direction by the court to have the statistics prepared for three months.

They say at page 308 the statistics contained in this exhibit were used and quoted by the plaintiff in dividing the different classes of traffic, such as trans-state, interstate and State, and in connection with the long and short haul. The length of haul of State and interstate freight and passengers on the Iron Mountain railroad is contained in exhibit 5 (R. 2327), and on the St. Louis Southwestern Railway in exhibit 14 (R. 2361.) The proportions of trans-state, interstate and State traffic were taken from exhibit 26, but the conditions which affected the loading of local and through trains did not affect the relation of the volume of trans-state freight to other classes of traffic, or impair the usefulness of the exhibit for that purpose; nor would the separation of carload and less than carload freight be affected. It was only the method of handling the freight in the local trains that was effected by the congestion.

The statistics contained in exhibits 5 and 26, the former covering a six months' period and the latter the month

of October, 1907, were compiled upon exactly the same basis as to these matters, the only difference being that exhibit 26 divides the freight between carload and less than carload and the interstate freight between that which is trans-state and that which is purely interstate. No attempt was made or could be made to show just what proportion of each class of traffic was handled upon through and local trains from the data which was used in compiling this exhibit, and our contention is that when the State undertook in exhibit I to determine the amount of freight actually handled on the local trains, and then subtracted that amount from the total traffic shown in exhibit 26, to arrive at the amount of freight carried upon through trains, their basis was wrong and the results obtained were entirely misleading. And this is especially true by reason of the fact that owing to the large amount of business and consequent congestion in that particular month the local train was used for the purpose of moving freight from division point to division point, regardless of the usual functions of the local train, and thereby loaded very largely with trans-state and interstate freights, which was contrary to the usual practice. Mr. Roth testified that he investigated sixteen of the local trains for the purpose of ascertaining whether there was any freight handled on those trains that was not included in the auditor's accounts and in the statements contained in exhibit 26, and found that 30.5 per cent of trans-state freight, 15.5 per cent of other interstate freight and

6 per cent of State freight carried on those trains was not included in the October account. These percentages showed that practically one-third of the trans-state freight carried on the sixteen local trains was not included in the October accounts, as shown by exhibit 26, and showed further that any attempt to determine the relative amount of tonnage carried on both classes of trains by taking the actual movement on the local train and the difference between that and the total amount of traffic taken into account as representing the movement on through trains, does not by any means represent the actual facts. But it does not impair the usefulness of exhibit 26 for the purpose of showing the percentage of trans-state freight that moved in the State of Arkansas during that period; nor does it conflict with the correctness of the statistics contained in exhibit 26 showing the relation of carload and less than carload.

Counsel in their brief make a comparison of the revenue per ton per mile as shown on exhibit 5 and exhibit 26, for the purpose of demonstrating that there could have been no abnormal handling of through freights on local trains in October, 1907. We are unable to see any possible relation between the revenue per ton per mile as shown in the accounts of the railroad company, and the question as to whether the freight that produced the revenue was handled on a local or a through train, but a comparison of the two exhibits does disclose a relation between the tons handled in the State of Arkansas in the month of October

as compared with the six months' period that is instructive, and which bears out our statement that the statistics contained in exhibit 26 correctly show the relation of the volume of the different classes of traffic handled in the State during the month of October. It of course could have no bearing as to the train upon which the freight moved, but it does, we submit, demonstrate very fully and conclusively that the volume and proportions of the freight handled are correctly stated in the exhibit.

Exhibit No. 26, covering the month of October, shows that 21.15 per cent of all tons handled in the State of Arkansas was intrastate traffic, that 14.16 per cent of all freight revenue was intrastate revenue, that 8.15 per cent of all ton miles handled was intrastate traffic; while exhibit No. 5, covering the six months ending December 31, 1907, shows that 19.98 per cent of all tons handled was intrastate traffic, 13.41 per cent of all freight revenue was intrastate, and 7.25 per cent of all ton miles was intrastate ton miles, the percentages being such as to show that there is but little difference between the month of October, 1907, and the entire six months' period.

These comparisons support the statement of Mr. Doddridge and Mr. Kimbell, that one month would be representative as to the relative proportions of the different kind of business, and useful for the purpose of determining the average relation that one class of business bore to the other, and demonstrate that while the statistics contained in exhibit 26 could not be used in any way for the purpose

of determining the distribution of State and interstate freight in loading local and through trains, those statistics were properly used for the purpose of showing the relative volume of trans-state, interstate and State, and the carload and less than carload business.

They seek to impeach the testimony of Cannon, Moore and Brown as to the effect of the congestion upon the loading of local trains. They say exhibit I shows the local trains average 16.6 cars and through trains 33.2 cars, and then assume that if 600 tons had been added to the local trains it would represent 17 cars. This is a very extraordinary view to take of the testimony. B. W. Moore testified that during the congested period the superintendent issued orders to utilize the local train power to the best advantage and load up to 1,000 tons on light engines of 1,200 tons capacity, "and we added to our local movements an added tonnage of probably 500 or 600 tons to the train." The superintendent, Mr. Cannon, testified that during the fall of 1907, on account of the heavy movement of business, the usual practice of loading local trains was changed. Local trains during normal times handle nothing but less than car load freight, and what is called short loads—loads destined to stations in the local train territory. During the fall of 1907 the locals were filled up to nearly the maximum tonnage with through loads, loads that went through the entire district that the local ran over. The excess tonnage ran from 300 to 800 gross tons per day. All the testimony shows that the average loading of merchandise

freight is five tons to the car at the starting point, which is reduced as the tonnage is distributed from station to station, and that the cars in local trains are loaded very much below the maximum capacity of the engine under ordinary conditions. The evidence of Superintendent Cannon and the other witnesses who testified on the subject is simply that the local trains were loaded up to their full capacity, and that the effect of the additional loading was to very materially increase the tonnage of the local trains.

Mr. Cannon testified that ordinarily the local train handles 75 per cent of the State freight, but that during the congestion the conditions were reversed and it did not carry over 25 per cent. Mr. Brown stated practically the same. It can be readily seen, in view of the make-up of local trains and the manner in which they are loaded and handled, that the tonnage might easily have been increased in the manner testified by these witnesses. We can perceive no inconsistency whatever between the conditions referred to by counsel and the testimony of these witnesses.

Respectfully submitted,

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